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United States  
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Forest Service

Alaska Region  
R10-MB-147

August 1991



# Crystal Mountain Communication Site Designation

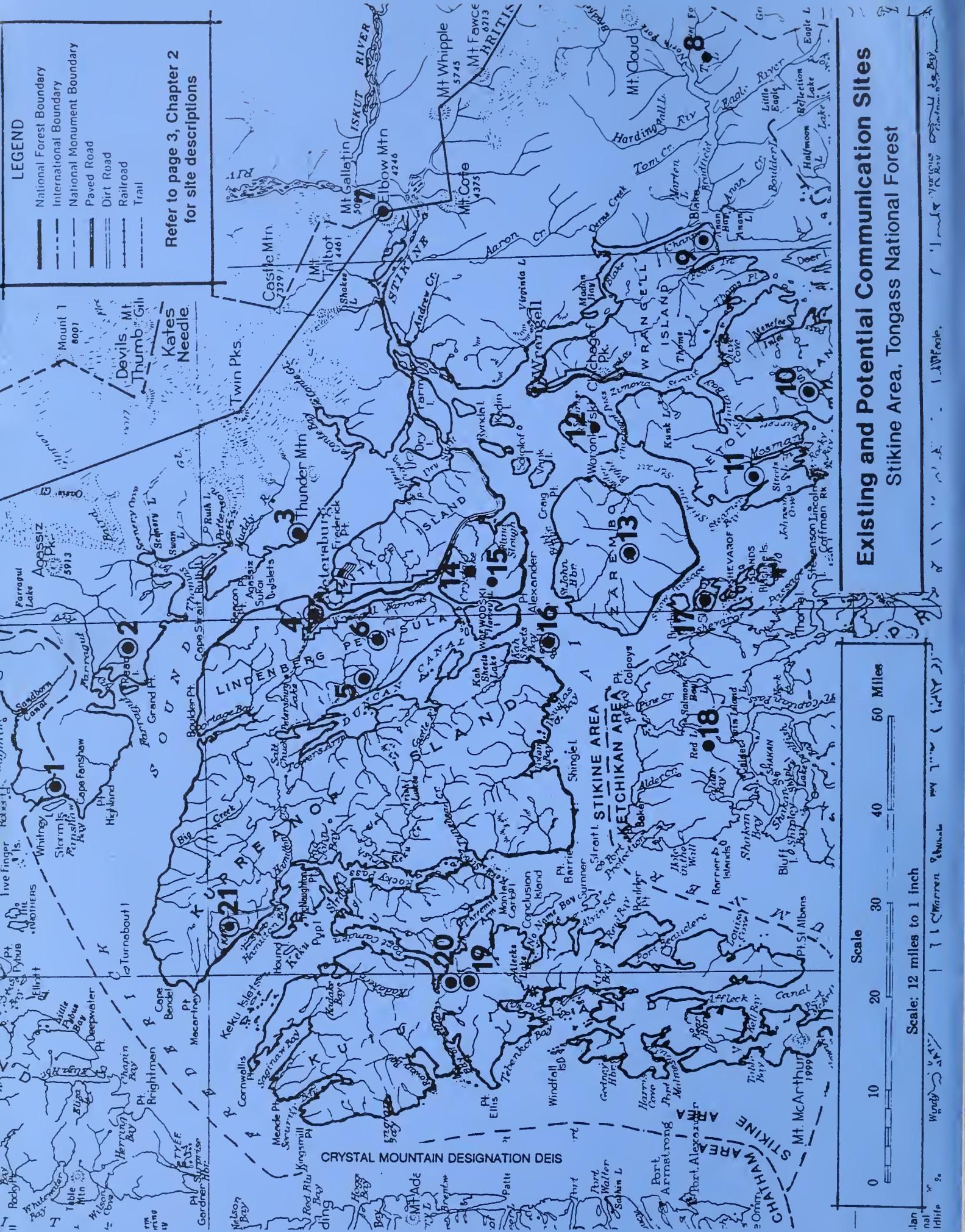
## Final Environmental Impact Statement

Alaska Region, Stikine Area

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## Final Environmental Impact Statement

# Crystal Mountain Communication Site Designation

USDA Forest Service  
Tongass National Forest  
Stikine Area  
August 1991

**Responsible Agency:** USDA Forest Service  
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Juneau, Alaska 99802-1628

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**Appeals Must Be Received:**

No later than 45 days following the date that notice of the Record of Decision is published in the Juneau Empire. Appeals must be addressed in writing to:  
F. Dale Robertson  
Chief of the Forest Service  
U.S. Department of Agriculture  
South Bldg.  
12th & Independence Ave. S.W.  
Washington, D.C. 20250

**Abstract:** This Final Environmental Impact Statement describes the impact of designating Crystal or Sumner Mountain as a communication site, or recommending that the applicant apply for special use permits on Lindenberg and Zarembo Mountains. Special considerations include the context of 16 sites that are already designated as communication sites on the Stikine Area, and compatibility of designation with recreation use on Crystal Mountain

**Key Words:** Communication site, communication site analysis, compatibility, Crystal Mountain, designation, recreation, Sumner Mountain, telecommunications.



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# **Summary**



# Summary

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"Designation of a communication site is a long term management decision. The decision should consider future needs of the Forest and the public, and the management direction for associated lands. Once improvements are in place, changing the management direction becomes difficult."

Forest Service Manual 2720, ID 90-3

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## Introduction

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\*The Draft Environmental Impact Statement (EIS) for the Crystal Mountain Communication Site Designation was published in April 1991. As a result of public comments and internal review, a number of changes have been made. The addition of new material has been highlighted with asterisks. For example, asterisks mark the beginning and end of this paragraph.\*

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### Communication Proposal

The Stikine Area of the Tongass National Forest has received a proposal from Crystal Mountain Communications to develop a communication site on Crystal Mountain. The purpose of the proposed development is to provide communication between Petersburg and Wrangell at low power, such as with handheld radios and radio phones, and to provide as much additional coverage as possible of rural and marine areas on the Stikine Area and beyond.

\*The Forest Service cannot consider the proposed development unless Crystal Mountain is designated a communication site in the Tongass Land Management Plan (Forest Plan). Consequently, the proposed action in this EIS is to designate Crystal Mountain a communication site and amend the Forest Plan accordingly. If Crystal Mountain were designated, the applicant's proposal would then be considered in a second, site-specific analysis.\*

### \*Recreation Use\*

\*Crystal Mountain is a valuable recreation site for local people as well as visitors from out of town who enjoy the natural appearance and spectacular view from the summit. Some of them are adamantly opposed to designation of Crystal Mountain as a communication site, citing years of effort to prevent development of the Crystal Mountain/Blind Slough area and plans to designate them as a Special Interest Area with emphasis on zoological and scenic values.\*

## Summary

### 1990 Decision & Remand

Crystal Mountain was designated as a communication site during June 1990 but the decision was appealed to the Chief of the Forest Service in July. In October 1990 the Chief's office remanded the designation decision for further analysis of the need for designation of Crystal in light of already existing sites, and for additional analysis on compatibility of designation with recreation use.

### Area-wide Analysis

In the Winter of 1991 the Stikine Area conducted an Area-wide Communication Site Analysis.

#### Communication Needs Survey

The Forest Service conducted a mail survey of communication needs in the next 10 to 15 years. The survey results demonstrated a desire for services that can be provided from Crystal Mountain.

#### Communication Site Analysis

The Forest Service ordered a set of maps from the National Telecommunications Information Agency (NTIA) that show the low power coverage (including handheld radios and cellular phones) and the high power coverage (including units powered by trucks, commercial boats, and AC power in the home). The set of maps includes one overlay for each of 16 existing sites that are already designated in addition to other sites that are not designated.

The maps show that much of the area that could be covered from Crystal Mountain is already covered by existing sites, but each existing site only covers a portion of Crystal's range. Currently people can communicate *within* each of the sub-areas, but not *between* areas. The Crystal site would allow communication between sub-areas at low power levels, most notably between Petersburg and Wrangell. It is this ability to tie together various areas that makes Crystal Mountain a powerful communication site.

The maps also show that Crystal Mountain is the only single site that can be reached with the use of low power units from Petersburg and Wrangell. Sumner Mountain provided the coverage \*most similar\* to that of Crystal. The combination of Lindenberg and Zarembo sites, both already designated, could provide services similar to Crystal.

## Alternatives Considered in Detail

### Alternative 1

Alternative 1 is the proposed action. It would designate Crystal Mountain as a communication site. The applicant could then apply for a special use permit to construct and operate communication facilities on Crystal Mountain.

### \*Alternative 2\*

\*Alternative 2 would designate Sumner Mountain as a communication site. Sumner appears to be the best single site that most nearly duplicates the coverage provided from Crystal Mountain.\*

### \*Alternative 3\*

\*Alternative 3 is the no-action alternative. It would not designate any new communication sites because the proposed coverage could be provided from the combination of the Lindenberg and Zarembo Mountains, both of which are already designated as communication sites.\*

# Consequences

## Direct Effects

Communication site designation is an amendment to the Forest Plan that allows communication uses to be considered. It does not permit any communication facilities. There are no direct effects to Crystal or Sumner Mountains as a result of designating or not designating their summits, or choosing no action. The only direct effect of designation would be a notation in the Forest Plan.

## Indirect Effects

Indirect effects do not include site specific details such as the size of a structure or number of antennas. If Crystal Mountain were designated, site specific effects would be addressed in a separate site development analysis. Indirect effects include the effects likely to occur as a result of designating or not designating Crystal \*or Sumner\* Mountains,\* or choosing no action.\* Indirect effects include those anticipated in the eventual development or lack of development on the site.

### Meeting Communication Needs

\*Alternatives 1 and 3 would provide for meeting the communication needs described, although the coverage possible from the dual site in Alternative 3 would not be as reliable as from a single site. Alternative 2 would meet many of the needs described but could not communicate with Petersburg at low power levels.\*

### Compatibility with Recreation Use

\*Alternative 1 would allow recreation access and development of trail, as planned. It would change the nature of the recreation experience when approaching and arriving on the summit. This change would bother some people and would not bother others. Some users may be displaced. Alternatives 2 and 3 would change the nature of the recreation experience on each of the sites involved, but more on Sumner than Lindenberg or Zarembo.\*

### Visual Resource

\*With Alternative 1, hikers approaching the summit would see a shelter and antennas before seeing the summit. A communication facility will dominate the foreground view. Alternatives 2 and 3 would have similar visual effects on the Sumner, Lindenberg, and Zarembo sites.\*

### Impact on Natural Resources

\*None of the alternatives would have an effect on soils and geology or watershed features. A facility would cover a couple hundred square feet of alpine vegetation. Some species of birds are minimally vulnerable to striking an antenna. No effects are anticipated on threatened or endangered species.\*

### \*Impact on Subsistence Use\*

\*No impact is anticipated on any of the sites regardless of the alternative selected.\*

### \*Impact on Cultural Resources\*

\*No impact is anticipated on any of the sites regardless of the alternative selected.\*

### Cost to Communication Users

The cost to communication users was estimated for a hypothetical \*set of\* service based on the cost to develop each site. The hypothetical services would cost:

- \*\$26, \$260, and \$2600 with Alternative 1\*
- \*\$35, \$350, and \$3500 with Alternative 2\*
- \*\$81, \$810, and \$8100 with Alternative 3\*

### \*Reasonably Foreseeable Development\*

With Alternative 1, reasonably foreseeable development includes the possible use of diesel generators and fuel tanks or a buried powerline and development of a recreation trail to Crystal Summit. With Alternatives 2 and 3, reasonably foreseeable change on the Sumner, Lindenberg, and Zarembo sites includes the possible use of diesel generators and fuel tanks.

## Cumulative Effects

### \*Meeting Communication Needs\*

\*Communication services would expand on the Crystal, Sumner, Lindenberg, and Zarembo sites with Alternatives 1, 2, and 3.\*

### \*Compatibility with Recreation Use\*

\*With Alternative 1, the presence of diesel would add more bulk, sound, and smell; presence of a buried powerline would remove the effect of propane tanks; a trail would make access easier, resulting in increased recreation use and a less solitary experience. With Alternatives 2 and 3, the presence of diesel would add more bulk, sound, and smell.\*

### \*Visual Resource\*

\*With Alternative 1, the presence of diesel would add more bulk to the appearance while the presence of buried powerline would remove the bulk of propane tanks. With Alternatives 2 and 3 the presence of diesel would add more bulk to the appearance.\*

### \*Impact on Natural Resources\*

\*With Alternative 1, diesel power would require adequate containment to prevent a fuel spill from seeping into the ground. The presence of a trail would improve access and probably result in greater hunting pressure on the isolated ptarmigan population. Construction of a powerline would disturb the ground from Crystal Lake to the Summit. With Alternatives 2 and 3, diesel power would require adequate containment to prevent a fuel spill from seeping into the ground.\*

### \*Impact on Subsistence Use\*

\*If a trail is constructed on Crystal Mountain, access and competition for resources may increase, resulting in greater pressure on the isolated ptarmigan population. This is true regardless of the alternative selected. No impact is anticipated on Sumner, Lindenberg, or Zarembo regardless of the alternative selected.\*

### \*Impact on Cultural Resources\*

\*No impact is anticipated on any of the sites regardless of the alternative selected.\*

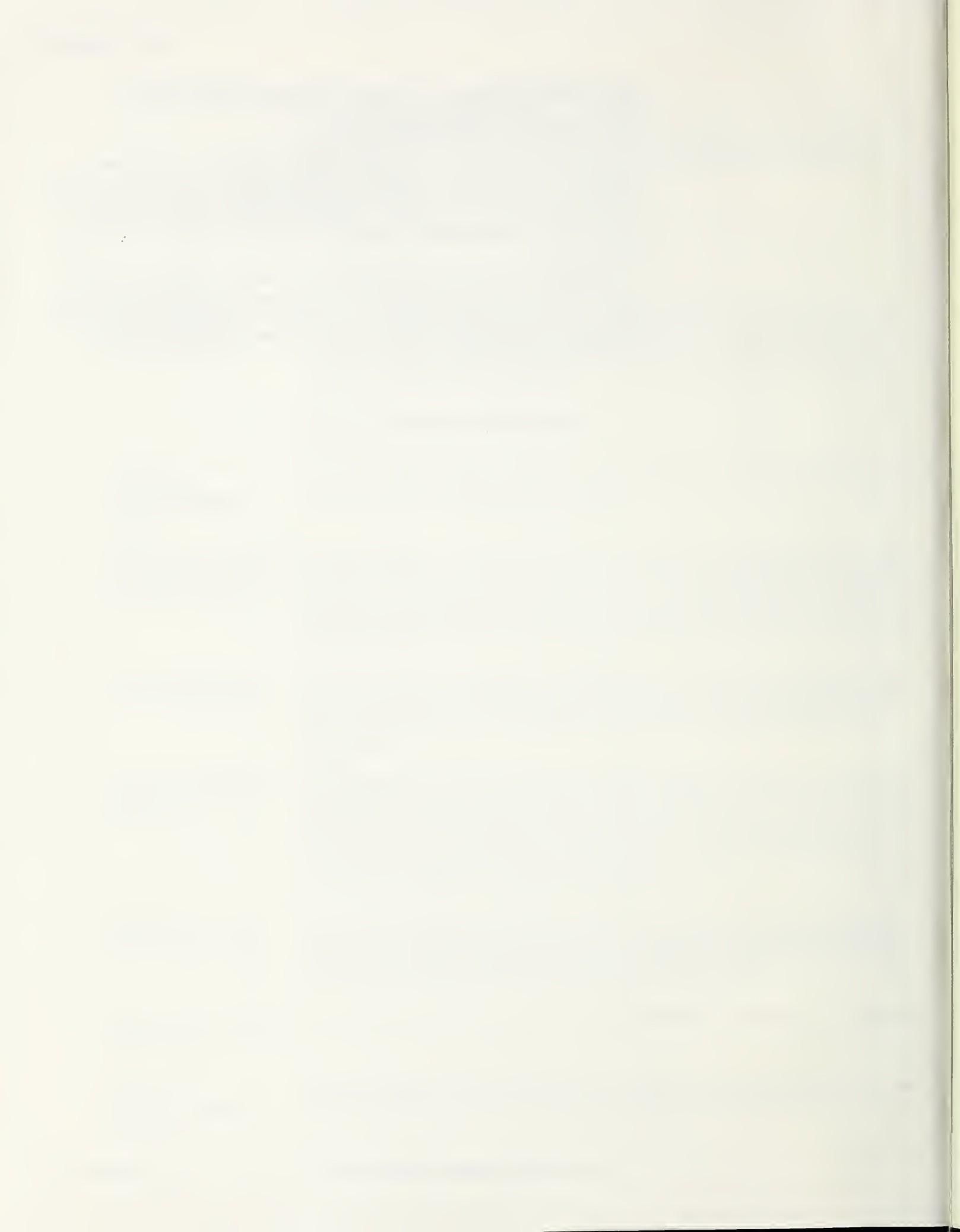
### \*Cost to Communication Users\*

\*With Alternatives 1, 2, and 3, increased development would probably mean increased services, presumably at the same cost ratio relative to the other sites.\*

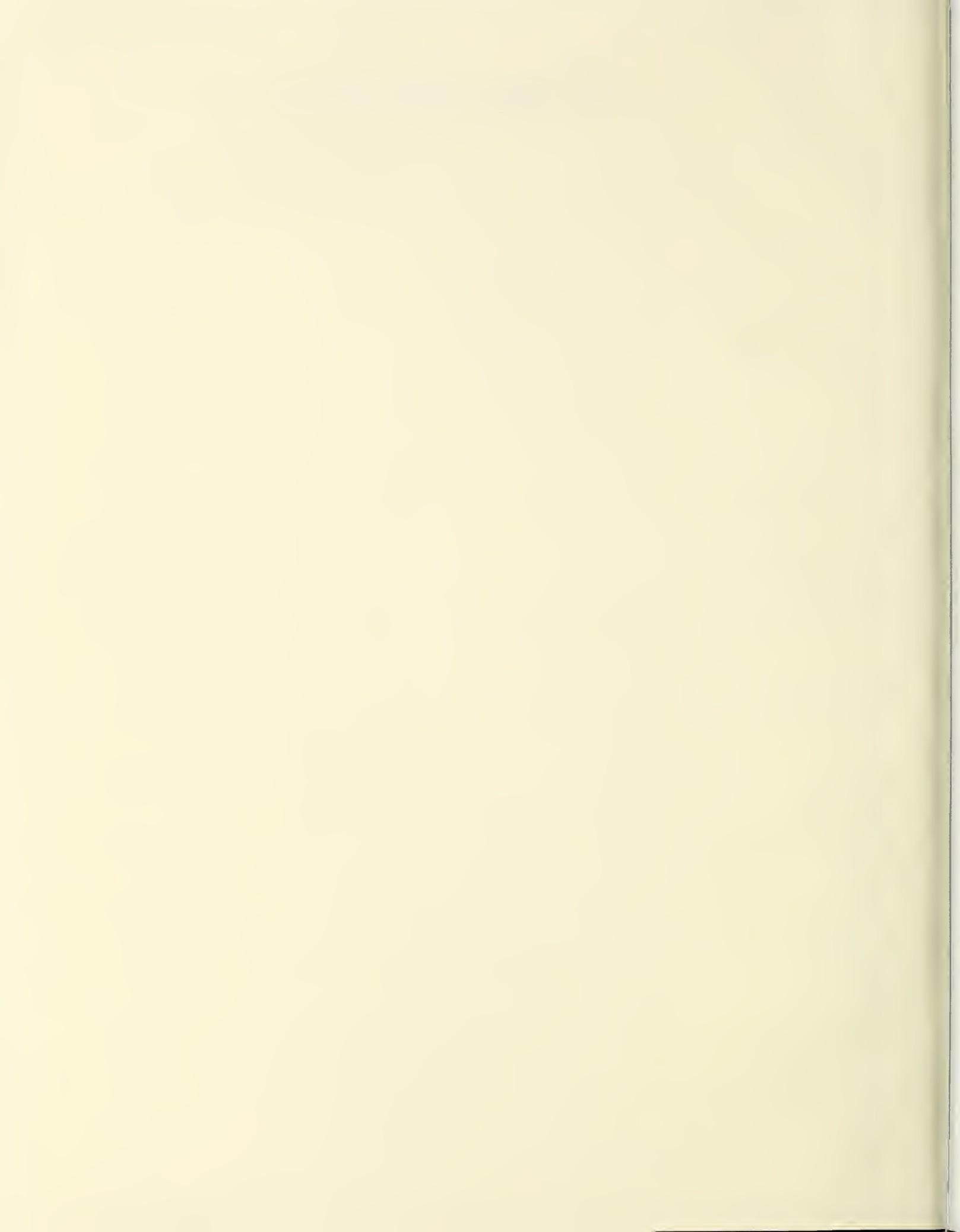
## **Identification of the Forest Service Preferred Alternative**

The alternative preferred by the Forest Service is Alternative 1, to designate Crystal Mountain as a communication site. Crystal Mountain could provide line-of-sight communication between the outlying areas and the communities of Petersburg and Wrangell; low power coverage of much of the rural areas and waterways on the Stikine Area; and high power coverage of 6750 square miles and a population of 7000 people.

Alternatives 2 and 3 could not provide the coverage or reliability possible on Crystal. Sumner cannot cover Petersburg at low power levels, which could mean a loss of up to half the proposed service. The combination of Lindenberg/Zaremba is less reliable than Crystal Mountain and so much more costly it is doubtful that services would be offered.



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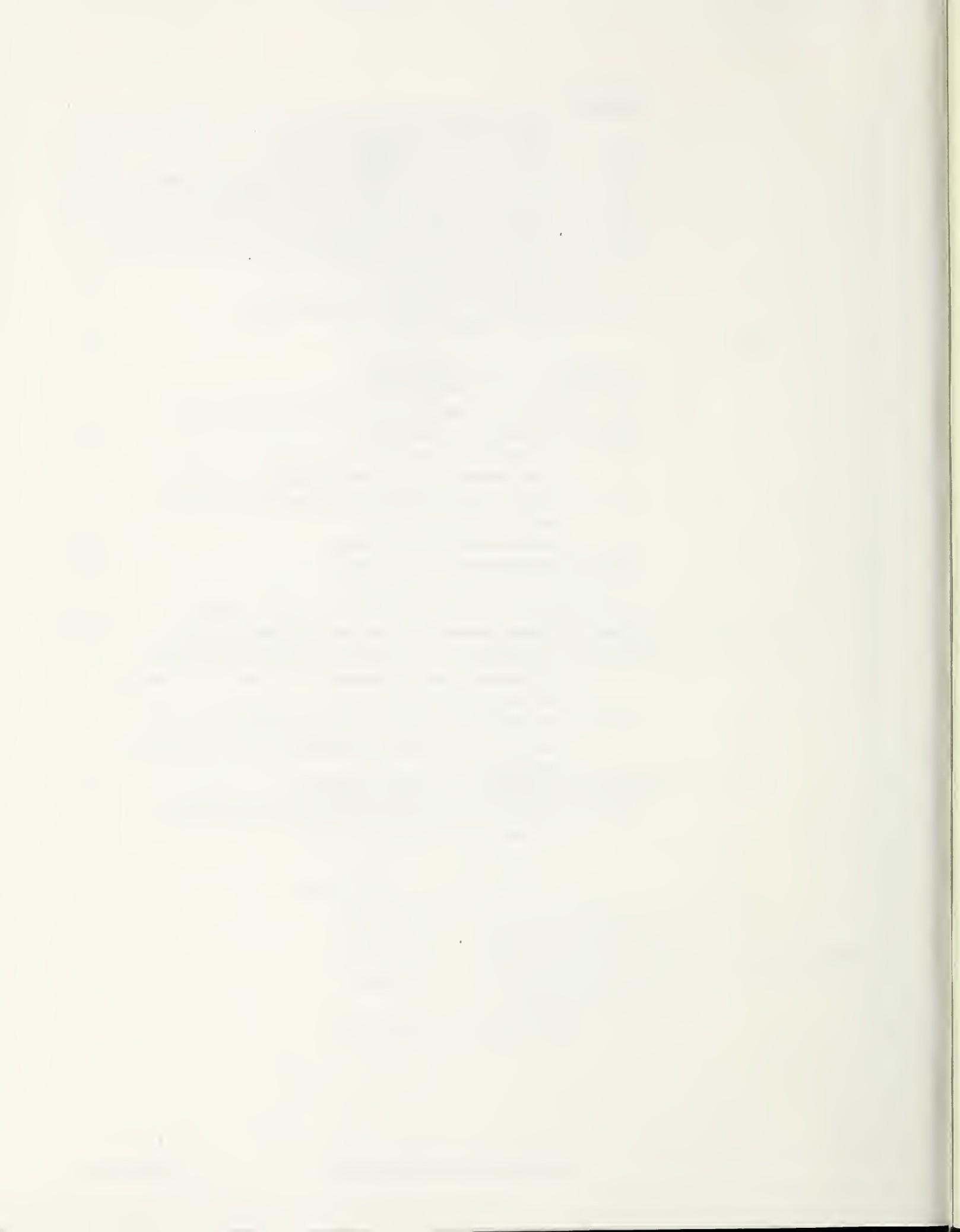
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# **Chapter 1**

## **Purpose and Need**



# Chapter 1

## Purpose and Need

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"When communication sites are not designated in the Forest Plan, the Forest Supervisor shall prepare a NEPA analysis of the site(s) for Regional Forester approval. Considerations should include relationship to other sites."

Forest Service Manual 2720, ID 90-3

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### Introduction

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\*The Draft Environmental Impact Statement (EIS) for the Crystal Mountain Communication Site Designation was published in April 1991. As a result of public comments and internal review, a number of changes have been made. The addition of new material has been highlighted with asterisks, such as those at the beginning and end of this paragraph.\*

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#### Proposed Development

The Stikine Area has received a proposal from Crystal Mountain Communications to develop a communication facility on Crystal Mountain, located on the southwest portion of Mitkof Island (see \*Appendix A for proposal and map inside front cover\* for location). \*The applicant's intent is to provide high power and low power communication services that are desired but not currently available on portions of the Stikine Area of the Tongass National Forest.\*

#### Purpose of the Proposed Development

The purpose of the proposed development is to provide high power and low power communication services. Commercial boats and trucks generally have high-powered radios and do not require low-power communication capabilities. Portable, low-powered communications are valuable to people who are "on call," such as doctors, repair persons, and construction crews. For a single-person business servicing fishing boats, better communications could mean talking to a prospective customer on a portable phone while working on another job, saving a trip back to town to find out about the second job. Power companies could use improved service to help track down powerline problems. Outfitters, guides, and resort services could provide communications for business clients who need to maintain contact with a home office. Residents of logging camps could have telephone service. And any resident in the area could benefit from the improved emergency response capabilities that would be available to police departments and hospitals.

## **1 Purpose and Need**

### **\*Proposed Action Addressed in this EIS\***

\*The Forest Service cannot consider the proposed development unless Crystal Mountain is designated a communication site in the Tongass Land Management Plan (Forest Plan). Consequently, the proposed action in this EIS is to designate Crystal Mountain a communication site and amend the Forest Plan accordingly. The purpose of designation is to allow consideration of proposals that would provide telecommunication services from Crystal Mountain to potential users on the Stikine Area.\*

\*Designation of a communication site is a Forest Plan decision. If the Regional Forester designates Crystal or Sumner Mountain, his Record of Decision will amend the Forest Plan. Like all Forest Plan decisions, it would establish (1) program-level guidance for where certain activities would be allowed and (2) standards and guides to which any specific project must adhere. The details of the applicant's proposal would then be considered in a second analysis. This approach is consistent with the Forest Service two-step decision making process, with Forest Plan decisions at the first level and project decisions at the second level. \*

### **Rural Economic Development**

The rural economy has not kept pace with national economic growth, yet rural people, land, and natural resource industries are important to the Nation's economic competitiveness. The Forest Service supports a new Presidential initiative on rural economic development with its own "Strategic Plan for the 90's: Working Together for Rural America." In Congress, current legislative proposals focus on several aspects of rural development considered to be critical at this time, including telecommunications and other rural infrastructure needs. The Forest Service policy is to provide leadership in working with rural people and communities on developing natural resource-based opportunities and enterprises that contribute to the economic and social vitality of rural communities. \*A number of people in the communities of Petersburg and Wrangell, and the outlying areas, have indicated a need for services that could be provided from Crystal Mountain.\*

At the same time, the Forest Service must be creative in applying the multiple-use concept in a way that maintains or improves the balance among natural resources and resource users. Crystal Mountain \*attracts interest\* as a communication site for one of the same reasons recreationists enjoy climbing it and enjoying its views: it is the tallest mountain in the vicinity and the view from the top is spectacular. More people recreate on the National Forests than anywhere else, and the Forest Service recognizes the importance of the great outdoors in its long-term strategy for managing natural resources. In 1988 the Forest Service developed its National Recreation Strategy to emphasize recreation. And in 1991, President Bush is proposing his America's Great Outdoors plan to accelerate efforts to meet recreation needs. Crystal Mountain provides just the kind of semi-primitive recreation experience many people seek. It's an area with opportunity to feel solitude, risk, and challenge. The setting is mostly natural and has few alterations. Crystal Mountain is part of the Blind Slough and Crystal Mountain complex that has been proposed for designation as a Special Interest Area in the preferred alternative of the Tongass Land Management Plan Revision.

### **National Recreation Strategy & America's Great Outdoors**

The presence of two initiatives that may sometimes conflict is not new to the Forest Service. The Forest Service mission is to provide a continuing flow of natural resources goods and services, such as rural communications and recreation experiences, for example, while protecting the environment. Both services are important, both are backed by Forest Service and Presidential initiatives, and both are legitimate uses of Crystal Mountain.

### **Multiple-Use Mission**

**Private  
Development on  
National Forests**

Private or special use on the National Forests can be authorized when no reasonable alternative exists. Special use permits (SUPs) are approved on National Forests only if there is no private or state land available that is suitable for the development. No private or State lands are available that would provide the same coverage as Crystal Mountain.

## Site Characteristics Requested by Applicant

A number of site characteristics are required to provide the services proposed by the applicant.

- Provide line-of-sight contact to Petersburg and Wrangell for control link for
  - Remote monitoring and control of radios
  - Low power, handheld radio and cellular phone systems in Petersburg and Wrangell
  - Microwave link to allow many channels on each frequency (as opposed to one channel per frequency with VHF/UHF radio)
- Provide low power coverage of population centers including
  - Petersburg
  - Kupreanof
  - Wrangell
  - Point Baker
  - Coffman Cove
- Provide low power coverage of State of Alaska land selection areas including
  - Frederick Point South
  - Blind Slough South
  - Thomas Bay
  - Wrangell Narrows
  - Coffman Cove
  - St. Johns Harbor
- Provide as much additional low power coverage as possible in rural areas for use of handheld radios and radio pagers by:
  - loggers
  - rural residents
- Provide low power VHF/UHF coverage of major fishing and marine traffic areas. (While most commercial boats use high powered radios, many recreational boaters rely on low powered, handheld radios.) Bodies of water include
  - Sumner Strait
  - Chatham Strait
  - Zimovia Strait
  - Frederick Sound
  - Duncan Canal
  - Clarence Strait

## Background

During the \*Summer\* of 1989 the Forest Service became aware that a communication structure was located on the summit of Crystal Mountain, along with discarded batteries and other debris. The Forest Service discovered that the structure, 5 feet in diameter and 10 feet tall, with a 20-foot antenna attached, had been placed there in May of 1986 by Rock 'N Road Construction. Rock 'N Road thought the site was already permitted to Temsco, Inc., and had asked for and received permission from Temsco to occupy the area. In fact, Temsco had possessed only a temporary permit to test radios in the mid-1960's. As a result, the Rock 'N Road structure was placed on the summit in trespass. The Forest Service suggested that Rock 'N Road remove the structure or apply for a permit to make it legal.

On November 7, 1989, Mortronics, an electronics company working with Rock 'N Road Construction, applied for an electronic site Special use permit (SUP) for Crystal Mountain. The name of the applicant company was then changed to Crystal Mountain Communications. On June 6, 1990, Regional Forester Mike Barton designated Crystal Mountain as a communication site, paving the way to consider authorization of a SUP for construction and operation of a facility.

On July 25, the Regional Forester's decision was appealed to the Chief of the Forest Service. The applicant removed the trespass structure from Crystal summit on August 24, 1990, and cleaned up debris that had been left by previous users \*at the request of the Forest Service.\* Two public meetings were held to discuss mitigation measures to include in the environmental analysis for site development. Then on October 30, the Chief's office remanded the decision back to the Regional Forester for additional analysis. In his remand, the Chief directed the Regional Forester to perform an Area-wide communication site analysis. The Chief also directed the Regional Forester to provide more quantitative analysis to determine whether the environmental impacts were "significant" according to National Environmental Policy Act (NEPA) regulations.

As a result of the remand, the Regional forester directed the Stikine Area to (1) perform a Stikine Area-wide communication site analysis; (2) write an EIS that considers designation of Crystal Mountain; and (3) if Crystal Mountain is designated, write an environmental analysis to consider authorizing a site plan and SUP on Crystal Mountain.

## Decisions to be Made

The impacts documented in this Environmental Impact Statement provide the basis for the following decisions to be made by the Alaska Regional Forester and documented in the Record of Decision (ROD):

- (a) \*Whether to designate\* Crystal Mountain or \*Sumner Mountain\* as a communication site, or take no-action to designate a site.\*
- (b) \*If Crystal or Sumner Mountain is designated, the Record of Decision will amend the Forest Plan to include the mountain as a designated communication site.\*
- (c) If Crystal \*or Sumner\* Mountain is designated, what characteristics will be specified for size of area, location of boundaries, \*and scale of development?\*

The designation of Crystal \*or Sumner\* Mountain would not authorize construction and operation of a facility. It would simply say that \*the\* mountain is an appropriate place for someone to apply for a permit to provide communication services. As a result, this EIS will not address specific mitigation measures -- those will be left to the site-specific permit decision. \*The purpose of describing the applicant's proposal in Appendix A is (1) to provide the reader with a reasonable understanding of the type of development that could occur if a mountain were designated, and (2) to develop a list of key site requirements to help identify whether other sites could provide the same services.\*

## Sources of Guidance

Sources of guidance for this EIS include, but are not limited to the Tongass Forest Plan, Interim Directive 90-3 on Special Use of Electronic Sites, and the remand of the previous designation by the Chief of the Forest Service.

### Forest Plan

Communication sites are designated in the Forest Planning process; thus any new designations are considered amendments to the Forest Plan and must be signed by the Regional Forester. The Tongass Land Management Plan (Forest Plan) allocates areas within the Forest into four land use designations (LUD's):

LUD I: To be managed as wilderness areas

LUD II: To be managed in a roadless state to retain wildland character

LUD III: To be managed for a variety of uses, both amenity and commodity, in a compatible and complementary manner to provide the greatest combination of benefits

LUD IV: To be managed for opportunities for intensive resource use and development where emphasis is primarily on commodity or market resources

Crystal Mountain is located in a LUD III area, to be managed for both amenity and commodity uses. Communication sites are an appropriate use of LUD III lands.

### Interim Directive 90-3

This interim directive (ID) is an update to the Forest Service Manual on Electronic Sites (Section 2728.1). It replaces Interim Directive 68. ID 90-3 describes the need for a Forest-wide (or Area-wide in this case) site analysis, the process for designating communication sites, site plan analysis, and many other details related to review, authorization, and administration of electronic sites. The directive also acknowledges that \*designation of a communications site is a long term management decision. The decision should consider future needs of the Forest and the public, and the management direction for associated lands. Once improvements are in place, changing the management direction becomes difficult.\*

## **1 Purpose and Need**

### **Remand of 1990 Designation**

Following the appeal of the Regional Forester's decision to designate Crystal Mountain as a communication site in 1990, the Chief's office agreed with the appellants that the analysis was not adequate and remanded the decision for further study. The letter of remand included a number of points that will be specifically addressed in this EIS:

#### **A. Area-wide Analysis**

The 1990 Environmental Assessment "did not analyze the relationship of the proposed Crystal Mountain site to the existing [16] sites on the Stikine Area, nor did it present information on future expansion at the Crystal Mountain site. An [Area-wide] communication site analysis is necessary to provide information about past, present, and future actions to which the proposal may be connected, and about actions with which it may create cumulative impacts."

#### **B. Environmental Impacts**

"Many people were concerned about the diminished or lost recreation opportunities which may occur as a result of the proposed action. Both the Recreation Specialist's report and the EA fail to respond to these concerns. The analysis lacks the detail and quantitative analysis necessary to evaluate the significance of impacts... In addition, the EA fails to adequately analyze the cumulative impacts and reasonably foreseeable future increased use of the site. Also, the impact of the proposed action upon future recreation use is not fully addressed."

#### **C. Are the Relative Value of Uses Analyzed and Disclosed?**

#### **D. Is a Communication Site Compatible with Recreation Use?**

#### **E. Do Viable Alternative Sites Exist?**

#### **F. Is Designation a Significant Amendment to Forest Plan?**

## **Stikine Area-Wide Telecommunications Plan**

The Stikine Area-wide Telecommunications Plan (site analysis) provides information that

helps managers decide whether designation is warranted. It is not an environmental analysis or decision document. The analysis was used to help understand whether Crystal Mountain is capable of providing the services proposed, whether the proposal addresses real communication needs, and whether alternative sites could provide the services proposed on Crystal Mountain.

## Choosing A Coverage Analysis Method

Communication coverage from any mountain top is difficult to judge simply by looking at topographical maps. A specialist can speculate about individual points a site might reach, but that person's knowledge is difficult to display to a public that is essentially asked to take the specialist's word for it. On-the-ground testing is also difficult because it demonstrates only points of coverage, not areas, and even then the points might reflect coverage that can only be depended on half the time. A third source of information on communication coverage is computer mapping based on United States Geologic Survey data and a program that calculates the behavior of radio waves.

A number of people have suggested that other sites could be compared with Crystal more effectively by performing on-the-ground testing. For example, the Lindenberg facility can sometimes talk to Wrangell even though the Area-wide Analysis maps suggest this is not possible. It may be true that the Lindenberg facility can talk to points in Wrangell, at some power levels, on some frequencies, during some weather conditions. But such coverage may disappear if the user in Wrangell used a low-power, handheld radio; or if a high-power user moved 100 yards in the wrong direction; or if weather conditions changed. \*Thus, other local firms may sometimes be able to reach specific *points* the Area-wide Analysis maps say they cannot, with an intelligible transmission; but, the maps describe *entire* areas that can be reached consistently with commercially reliable signal strength.\*

\*On-the-ground testing is extremely time consuming and expensive, and may yield less reliable results than the computer generated maps from the National Telecommunications and Information Administration (NTIA). On-the-ground testing could be subject to the same challenges faced by the computer generated maps today. Critics could fault research design and consistency of equipment calibration over the length of the study. On-the-ground testing is not foolproof even when practical for smaller applications. (See Appendix D, correspondence from NTIA, for an explanation of why so many of their clients rely on computer analysis rather than field surveys.)\*

## Comparison of Sites

To develop a reliable knowledge of dependable communication coverage, the Forest Service ordered a set of maps from the National Telecommunications and Information Administration (NTIA) in 1991. NTIA is a federal agency located in Boulder, Colorado, specializing in telecommunications information for many private and public groups including the Federal Aviation Administration, the Federal Communications Commission, and the Department of Defense.

The Forest Service package includes mylar map overlays that show the coverage of each of 16 existing communication sites on the Stikine Area, along with Crystal, Sumner, and other peaks. (See Appendix D for correspondence from NTIA describing the computer program used.) This information can be used for a variety of communication planning efforts, and it was used in this EIS to demonstrate whether the proposed services could be provided from sites that are already designated. The map overlays clearly show that Crystal Mountain provides coverage of the Stikine River, the community of Wrangell, Sumner Strait, and Clarence Strait, areas that cannot be reached well from sites already designated.

More importantly, Crystal would tie together a number of areas that cannot communicate now. Much of the area covered by Crystal is also covered by a half-dozen other sites, but each site only covers a portion of the Crystal range. People can communicate within each of these sub-areas right now, but not between areas. The Crystal site would allow communication between sub-areas at low power levels, most notably \*connecting outlying areas with\* Petersburg and Wrangell.

## **1 Purpose and Need**

### **Communication Needs**

The Area-wide Analysis also includes the results of a survey that was mailed to many companies, business associations, and governmental units to identify communication needs anticipated in the next 10 to 15 years.

#### **Surveys Received**

In January 1991 a needs survey was mailed to approximately 100 businesses, municipalities, utility companies, state and federal agencies, and others. Nineteen surveys were returned by June 1, 1991, representing 22 groups or individuals as shown in Table 1-1.

**Table 1-1. Groups and Individuals Responding to Needs Survey**

CATEGORY	PSG	WRG	KTN	SITKA	ANCHOR-AGE	DALLAS	TOTAL
Businesses	5	2	2		*1*	1	*11*
Municipal Depts		2	*4*				*6*
State & Federal Govt	2			1			3
Hospitals	1						1
Individuals	1						1
<b>TOTAL</b>	<b>11</b>	<b>*6*</b>	<b>2</b>	<b>1</b>	<b>*1*</b>	<b>1</b>	<b>*22*</b>

#### **Services and Areas Desired**

Of the \*22\* responses to the needs survey, \*17\* identified sites where communication was desired but not currently available. \*Five\* responses did not identify needs or areas. \*Thirteen\* responses, or 75 percent of those who identified needs, described areas and services that could be addressed by the Crystal Mountain proposal. These included:

- The communities of Petersburg (6 responses) and Wrangell (\*6\* responses)
- All Land in SE Alaska (4); all of Mitkof Island (2); and a 20-mile radius around Mitkof Island, Woewodski Island, Northern Prince of Wales Island, the Mainland, and South Etolin Island (1 each).
- All Water in SE Alaska (2), the Stikine River (2), Sumner Strait, Clarence Strait, Ernest Sound, Keene Channel, Frederick Sound, Stephens Passage, and the back channel of Wrangell Island (1 each).

#### **Type of Use Desired**

The type of use desired by those responding to the survey included radio, microwave, radio phone, facsimile, private voice and data communication, and auto-monitoring of fish-hold temperatures. Many responses included more than one type of use:

- |            |                     |
|------------|---------------------|
| *11*       | Business/commercial |
| 9          | Emergency           |
| *6*        | Government          |
| 5          | Personal            |
| <hr/>      |                     |
| *31* Total |                     |

**Informal Contacts by Applicant**

A number of businesses, government units, and individuals have expressed interest in the services proposed by the applicant on Crystal Mountain, including:

- A number of small businesses in Petersburg
- Petersburg Volunteer Fire Department
- Petersburg General Hospital
- Fishermen
- Logging camps
- Independent loggers
- Outfitters and guides
- Power companies
- A resort developer
- A paging service
- Petersburg and Wrangell Police Departments
- State Police network for wide range search & rescue

## EIS Analysis Process

A Notice of Intent was published in the Federal Register on January 28, 1991, and a revised version was published on April 12, 1991. A team consisting of resource and planning specialists collected and analyzed information about the demand for proposed communication services and the communication coverage provided from the proposed site and alternative sites.

**Public Scoping****From 1990 Designation**

The original application for a special use permit on Crystal Mountain was filed on November 6, 1989. A scoping notice was posted in the Petersburg Pilot on November 16, describing that "development of this site could include the installation of antennas, communications shelters, fuel tanks, power generators, and fences." Responses included 23 letters by the end of 1989, 22 against the designation and one in favor.

Crystal Mountain was designated a communication site by the Regional Forester on June 6, 1990, and his decision was subsequently appealed on July 30, 1990. Following the appeal, the Forest Service received eight letters in favor of designation, along with a petition favoring designation with 186 signatures.

While waiting for the decision on the designation appeal, the Stikine Area of the Forest Service continued to prepare a site development EA and held two public meetings. People on both sides of the designation spoke with each other and with the Forest Service about the nature of their concerns and possible mitigation measures. The decision on site development was never issued, however, because the designation decision was remanded for further study and a new decision document.

**From 1991 EIS Scoping**

Public comments from the 1990 Environmental Assessment were included as part of the scoping effort for the 1991 EIS. Many of the comments from the 1989/90 scoping effort were incorporated into a 1991 scoping notice that was sent to nearly 300 persons known to be interested in the proposed development. A survey with return address was attached to the scoping notice. Public notice was also published in the *Petersburg Pilot* and the *Wrangell Sentinel*. The Forest Service received 47 replies to the 1991 scoping notice, including pro and con on designation, and describing the need for communication services, the need to consider alternate sites, and the need to minimize impacts if Crystal Mountain is designated.

## **1 Purpose and Need**

### **Framing Issues**

Next, the team reviewed public and Forest Service comments and used them to frame questions, or issues, to help guide the analysis. Each issue describes an interest that is tracked throughout the EIS. Also described are indicators to help decisionmakers understand how well each alternative addresses each issue. \*Two issues, subsistence use and cultural resources, were added following publication of the Draft EIS. They were added to adhere to legal requirements.\*

### **Issues**

#### **1. Meeting Communication Needs**

**To what extent would this alternative provide coverage that cannot be reached by existing sites and is currently desired, or will be desired within the next 10 to 15 years?** Indicators of responsiveness to this issue include comparison of Crystal Mountain coverage with existing sites, response to Area-wide communication needs survey, and demand-for-service data provided by the applicant.

#### **2. Compatibility with Recreation Use**

**To what extent would each alternative be compatible with current and anticipated recreation use of Crystal Mountain?** Indicators of responsiveness include the quantity and quality of recreation use such as number of users, frequency of visits, description of the nature and value of the experience, a description of plans to construct a recreation trail on the mountain, extent to which use might be disrupted, \*and influence on eligibility of proposed Special Interest Area in Forest Plan Revision.\*

#### **3. Visual Resource**

**What effect would each alternative have on the visual resource of Crystal Mountain as viewed from Mitkof Highway, Blind Slough Picnic Area, Wrangell Narrows, the access route to Crystal Peak, and from Crystal Peak Itself?** Indicators of responsiveness include written descriptions and drawings of how each alternative would appear from various viewpoints.

#### **4. Impact on Natural Resources**

**What effect would each alternative have on the physical and biological resources on Crystal Peak?** Indicators of responsiveness include resource reports on water, soils, vegetation, and wildlife.

#### **5. \*Impact on Subsistence Users\***

**\*What effect would each alternative have on subsistence users in the vicinity?\*** \*Indicators of responsiveness include changes in access to subsistence resources, changes in abundance or distribution of subsistence resources; and changes in competition from non-subsistence uses for those resources.\*

#### **6. \*Impact on Cultural Resources\***

**\*What effect would each alternative have on the cultural resources and subsistence use in the vicinity?\*** \*Indicators of responsiveness include likelihood that area was used historically and extent to which indications of use have been identified.\*

#### **7. Cost to Communication Users**

**To what extent do the costs to users change in each alternative?** Indicators of responsiveness include changes in the cost of site development and facility maintenance, and changes in the cost of service to the customer.

**Tentative Issues  
Removed from  
\*Scoping\* List**

The list of tentative issues included in the scoping notice contained eight issues. Three of the issues have been dropped from the list in this EIS, not because they aren't important, but because they are better addressed elsewhere in the document. A fourth issue, "economic feasibility," was replaced with "cost to communication users."

**Long Term Expansion**

Long term expansion was dropped from the issues list because \*it has been addressed in the Reasonably Foreseeable and Cumulative Effects section of this EIS.\*

**Mitigation of Effects**

Mitigation is a way of reducing the impacts of \*a site-specific action.\* If Crystal \*or Sumner\* Mountain is designated, mitigation will be addressed in the site development analysis.

**Availability of Other Peaks**

Availability of other peaks is tracked \*in the alternatives section of Chapter 2,\* as alternatives that were and were not considered in detail rather than an issue with which to judge each alternative.

**Economic Feasibility**

\*While the Forest Service is interested in seeing communication needs met in southeast Alaska, the agency is not obliged to insure that a developer turns a profit. In order to distinguish between the needs of the developer and the needs of the community, the Forest Service rejected "economic feasibility" for the developer as an issue and replaced it with "cost to communication users."\*

**Alternatives**

\*The alternatives considered in detail are (1) designate Crystal Mountain, (2) designate Sumner Mountain, and (3) no-action because the services can be provided from existing sites. Alternatives 1 and 3 are the only alternatives that are responsive to the applicant's request, to designate or not designate Crystal Mountain. However, Alternative 2 was considered to identify whether viable alternative sites exist.\*

**Consequences**

The team described the location and condition of resources on each site and then described the consequences of each alternative and the extent to which each alternative addressed the issues.

**\*Draft and Final  
EIS, Record of  
Decision\***

\*After the Draft EIS was published, members of the public commented on the Draft during the 45-day comment period. The Forest Service team reviewed and responded to each of the comments, revised the Draft EIS, and published this Final EIS. Public comments on the Draft EIS, along with Forest Service responses, are included in Appendix C of this Final EIS. Finally, based on the team's analysis, the Regional Forester will issue his decision in a Record of Decision.\*

## **Additional Approvals Required**

**Designation**

No approvals are required by other agencies to designate Crystal Mountain. The summit of Crystal falls outside the State of Alaska coastal zone boundary and is therefore not subject to State coastal zone consistency review (June 1988, Coastal Zone Boundaries of Alaska). Similarly, a permit for a facility on Crystal Mountain would not be subject to State consistency review.

# **1 Purpose and Need**

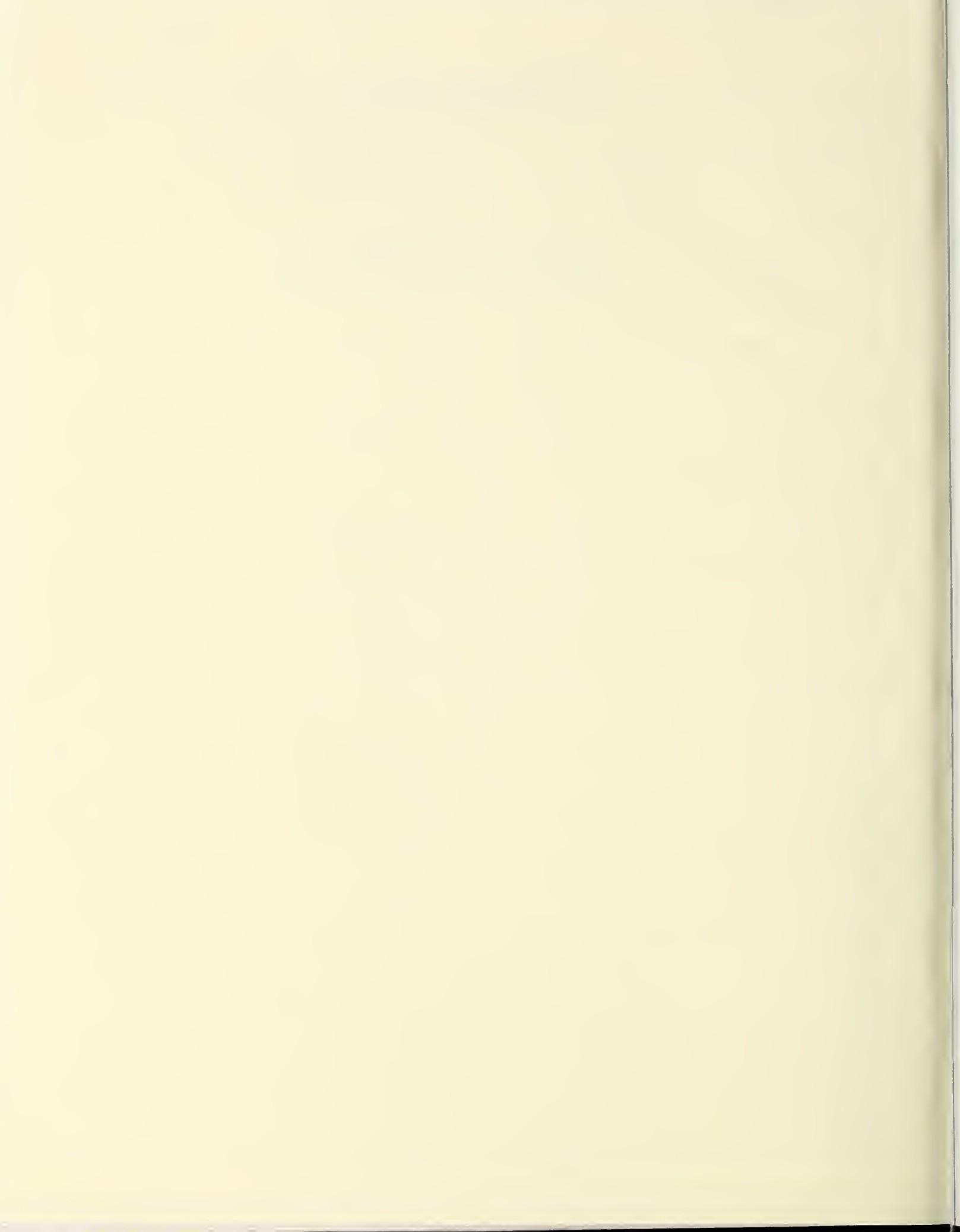
## **Site Development**

If Crystal \*or Sumner\* Mountain were designated, a special use permit could be issued only after the following steps:

1. The Forest Service performed a site-specific environmental analysis,
2. \*The Forest Service developed a site plan, and\*
3. The developer obtained a frequency assignment from the Federal Communications Commission.

# **Chapter 2**

## **Alternatives**



# Chapter 2

## Alternatives

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"[The environmental analysis should] contain or refer to the [Area-wide] communications site analysis. [It should include] an analysis of alternative sites and their relationship to the [16] currently designated sites on the Stikine Area of the Tongass."

Remand of 1990 Designation, 10/30/90

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### Process Used to Formulate Alternatives

\*In the Draft EIS, two alternatives were developed to respond to the applicant's proposal and to the issues described in Chapter 1. The no-action alternative was divided into sub-alternatives to reflect different reasons for choosing not to designate Crystal Mountain. We chose this approach so we could consider the viability of other sites without documenting impacts on those sites where no one had proposed action. In hindsight, we find this approach to be somewhat confusing, so we have displayed the same information differently in the Final EIS. In the Final EIS we compared the same sites but displayed them as three alternatives instead of two.\*

#### Alternative 1

Alternative 1 is the proposed action. It would designate Crystal Mountain as a communication site.

#### \*Alternative 2\*

\*Alternative 2 would designate Sumner Mountain as a communication site. No action would be taken on the Crystal, Lindenberg, or Zarembo Sites.\*

#### \*Alternative 3\*

\*Alternative 3 is the no-action alternative. It would designate no new sites because the combination of two existing sites, Lindenberg and Zarembo, could provide the desired coverage.\*

### Range of Alternatives

The range of alternatives addresses the proposal by the applicant to designate Crystal Mountain as a communication site. \*It also addresses the remand direction to consider whether viable alternative sites exist.\*

## **Existing and Potential Communication Sites**

Stikine Area, Tongass National Forest

Scale: 12 miles to 1 inch

0      10      20      30      40      50 Miles  
Scale

Scale

#### **CRYSTAL MOUNTAIN DESIGNATION DEIS**

Refer to chart below for site descriptions.

## 2 Alternatives

## LEGEND

A legend on the left side of the map page containing six entries, each with a line symbol followed by its name: "National Forest Boundary" (solid line), "International Boundary" (dashed line), "National Monument Bound" (dash-dot line), "Paved Road" (thick solid line), "Dirt Road" (thin solid line), "Railroad" (double line with vertical dots), and "Trail" (thin dashed line).

**LEGEND**

- National Forest Boundary
- International Boundary
- National Monument Boundary
- Paved Road
- Dirt Road
- Railroad
- Trail
- Rivers

**Alternatives**

Refer to chart below for site descriptions.

**CHAPTER 2**

**CRYSTAL MOUNTAIN DESIGNATION DEIS**

**Scale**

## Legend for Map 2-1.

Site Name	#	Location	Latitude	Longitude	Site Size	Status	Elevation
Crystal <sup>1</sup>	14	SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 13, T. 61 S., R. 80 E.	56°35'05"	132°51'55"		Not Designated	3317'
Duncan	5	SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 17, T. 59 S., R. 78 E.	56°45'12"	133°09'50"	2 acres	Designated	2606'
Elbow	7	NW $\frac{1}{4}$ sec. 3, T. 60 S., R. 86 E.	56°42'12"	133°52'45"	1 acre	Designated	3900'
Etolin	11	W $\frac{1}{2}$ SW $\frac{1}{4}$ sec. 18, T. 66 S., R. 83 E.	56°08'50"	132°37'20"	1 acre	Designated	3051'
Fanshaw	1	SE $\frac{1}{4}$ sec. 10, T. 54 S., R. 75 E.	57°12'22"	133°28'07"	2 acres	Designated	2100'
Farragut	2	NE $\frac{1}{4}$ sec. 8, T. 55 S., R. 78 E.	75°07'22"	133°02'35"	1 acre	Designated	3810'
Fools	9	SW $\frac{1}{4}$ sec. 21, T. 65 S., R. 87 E.	56°13'02"	131°58'27"	1 acre	Designated	3133'
Horn Cliff	3	SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 14, T. 58 S., R. 80 E.	56°50'50"	132°46'35"	1 acre	Designated	2880'
Kake	21	NW $\frac{1}{4}$ sec. 23, T. 56 S., R. 74 E.	56°57'48"	133°40'24"	0.1 acre	Designated	600'
Kashhevarof (Shrubby ls)	17	NW $\frac{1}{4}$ sec. 13, T. 65 S., R. 80 E.	56°04'10"	132°58'35"	1 acre	Designated	500'
Kuiu 1	19	SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 5, T. 61 S., R. 73 E.	56°36'45"	134°02'07"	2 acres	Designated	3500'
Kuiu 2	20	NW $\frac{1}{4}$ sec. 9, T. 61 S., R. 73 E.	56°36'42"	132°02'50"	1 acre	Designated	3355'
Level	16	sec. 28, T. 62 S., R. 79 E.	56°28'05"	133°05'00"	120 acres	Designated	25'
Lindenbergs <sup>1</sup>	6	SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 23, T. 59 S., R. 78 E.	56°44'38"	133°04'30"	1 acre	Designated	3249'
Navy	10	SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 11, T. 67 S., R. 84 E.	56°04'05"	132°23'00"	2 acres	Designated	3665'
Petersburg	4	SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 58 S., R. 79 E.	56°49'33"	132°59'10"	1 acre	Designated	1600'
Red Bay Mtn.	18	SW $\frac{1}{4}$ sec. 20, T. 65 S., R. 78 E.	56°13'05"	133°22'28"	1 acre	FS Admin Only	3042'
Summer <sup>1</sup>	15	NW $\frac{1}{4}$ N $\frac{1}{4}$ sec. 26, T. 61 S., R. 80 E.	56°33'30"	132°52'55"		Not Designated	2730'
Tyee	8	NE $\frac{1}{4}$ sec. 26, T. 65 S., R. 90 E.	56°12'25"	131°26'15"		Not Designated	4716'
Woronofski	12	NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 20, T. 63 S., R. 83 E.	56°23'15"	132°29'15"		Not Designated	3204'
Zaremba <sup>1</sup>	13	SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 1, T. 64 S., R. 80 E.	56°20'45"	132°51'35"	2 acres	Designated	2444'

<sup>1</sup>Sites considered in detail in this EIS.

## **2 Alternatives**

### **Rowan Proposal Removed from EIS**

The Chatham Area of the Tongass National Forest proposed the designation of Rowan Mountain as a communication site for administrative and safety use by the Forest Service. The proposal was unrelated to the Crystal Mountain proposal. It was not part of an alternative to Crystal or any other site that could provide similar coverage. Rowan Mountain was initially included in this EIS because Forest Service officials thought it would be economical to process both requests at once.

It has become apparent, however, that inclusion of Rowan Mountain has confused the issues for the Crystal Mountain proposal. In addition, the purpose and need for Rowan Mountain is different from the purpose and need for the proposed Crystal designation in ways that make it awkward and unwieldy to track through the EIS. As a result, the Rowan proposal has been removed from consideration in this EIS and will be reviewed in a separate NEPA document.

### **Alternatives Not Considered in Detail**

The Forest Service considered a range of other options and sites to judge whether the applicant's proposed service could be met from some site other than Crystal Mountain (see map 2-1). This section describes those other sites that clearly do not address the applicant's proposal.

#### **State or Private Land**

There is no suitable State or private land available for a communication site near Crystal Mountain. All State and private land is located at or near sea level.

#### **Satellite Communication**

Scoping responses suggested that satellite communications might soon make the Crystal Mountain proposal obsolete, and requested that the Forest Service investigate this possibility.

At present there are only a limited number of communications satellites covering most of the State of Alaska, with southeast Alaska being on the fringe of coverage. The technical difficulties in interfacing a fixed location downlink based on VHF/UHF frequencies with a non-fixed satellite would not be cost effective, as service costs alone could exceed \$7,000 per month for only marginal coverage. As a result of these factors, satellite communications capabilities were not considered for further analysis as an alternative in this EIS, although it should be kept in mind that future technical developments may make this more feasible at some future date.

\*The Forest Service called Motorola, the company planning to ring the Earth in satellites, to find out the current status of satellite technology for day-to-day communications. According to a company spokesman, such communication may be possible by 1996 and it may be cost effective by 2001.\*

\*Assuming the Motorola satellites are launched and operate as planned, ground stations would probably still be used in conjunction with satellite technology rather than being replaced. Users of handheld radios would not have enough power to transmit directly to satellites and would need to beam a signal to a ground station in order to amplify the signal before bouncing up to a satellite. In addition, the use of satellites causes greater frequency congestion than land based systems. Two land based systems separated by mountains and a few hundred miles can both use the same radio frequency because they can't reach each other to cause interference. A satellite can talk to such large areas it requires the use of more frequencies to avoid interference. As a result, land based systems and satellites will probably be linked to improve service and avoid frequency congestion in the future.\*

## Currently Designated Sites

\*These sites are included in this designation EIS, even though they are already designated, to demonstrate that the Forest Service considered whether they were viable alternative sites to Crystal Mountain.\* All of them provide some type of communication service on the Stikine Area but only Lindenberg Mountain provides commercial, multi-user facilities. This means that although communication for the general public is possible from all sites, it is available only from Lindenberg Mountain. Maps of the coverage from these sites are available for viewing at the Supervisor's Office in Petersburg. \*(This list includes only those designated sites on the Stikine Area that are anywhere near the proposed service area.)\*

### Duncan Site

- SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 17, T. 59 S., R. 78 E., CRM
- Latitude: 56°45'12"
- Longitude: 133°09'50"

Duncan Mountain, 2,606 feet in elevation, is located on the east side of Duncan Canal on Kupreanof Island. Access is by road to within one mile of the site, from the Tonka Log Transfer Facility. The site is currently occupied by an Alascom microwave facility for point-to-point telephone link, and by the Federal Aviation Agency for airport guidance and communication. The site designation is two acres.

- Low power radio coverage would include an area of 1340 square miles and a population of 1,000 people
- High power radio coverage would include an area of 3650 square miles and a population of 3,000 people

### Etolin Site

- W $\frac{1}{2}$ SW $\frac{1}{4}$ sec. 18, T. 66 S., R. 83 E., CRM
- Latitude: 56°08'40"
- Longitude: 132°37'10"

Etolin Peak, 3,051 feet in elevation, is located toward the southern end of Etolin Island. Access is by helicopter. The site is currently occupied by a Forest Service VHF/UHF link facility. The site designation is one acre.

- Low power radio coverage would include an area of 3,420 square miles and a population of 1,000 people
- High power radio coverage would include an area of 6,520 square miles and a population of 5,000 people

The Etolin site does not provide line-of-sight coverage to Petersburg.

### Horn Cliff

- SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 14, T. 58 S., R. 80 E., CRM
- Latitude: 56°50'50"
- Longitude: 132°46'35"

Horn Cliff, 2,880 feet in elevation, is located on the mainland, due east of Petersburg in the Stikine-LeConte Wilderness. Access is by helicopter. The site is currently occupied by an Alascom microwave facility for point-to-point telephone line. The site designation is one acre.

- Low power radio coverage would include an area of 1,940 square miles and a population of 4,000 people
- High power radio coverage would include an area of 5,200 square miles and a population of 6,000 people

Radio access is not possible to much of the area west and south of Mitkof Island.

### Lindenberg Peak

- SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 23, T. 59 S., R. 78 E., CRM
- Latitude: 56°44'38"
- Longitude: 133°04'30"

Lindenberg Peak, 3,249 feet in elevation, is located on Kupreanof Island in the center of the Lindenberg Peninsula. Access is by helicopter. The site is currently occupied by a Forest Service VHF/UHF link station and a multi-user, special use permit to Alaska Commercial Electronics. The site designation is one acre.

- Low power radio coverage would include an area of 2,000 square miles and a population of 3,000 people
- High power radio coverage would include an area of 4,090 square miles and a population of 4,000 people

While Lindenberg Peak would provide similar coverage as Crystal Mountain to the north and west, it does not provide reliable coverage of the Stikine River, Sumner and Clarence Straits, or the communities of Wrangell and Point Baker.

### Navy Peak

- SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 11, T. 67 S., R. 84 E., CRM
- Latitude: 56°04'05"
- Longitude: 132°23'00"

Navy Peak, 3,665 feet in elevation, is located on the southeast portion of Etolin Island. Access is by helicopter. The site is currently occupied by a State of Alaska Power Authority facility and a Seley Corp. VHF radio facility. The site designation is 2 acres.

- Low power radio coverage would include an area of 3,310 square miles and a population of 3,000 people
- High power radio coverage would include an area of 6,550 square miles and a population of 7,000 people

Navy Peak does not provide line-of-sight coverage to Petersburg.

**Petersburg Mountain**

- SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 58 S., R. 79 E., CRM
- Latitude: 56° 49' 33"
- Longitude: 132° 59' 10"

Petersburg Mountain, 1,600 feet in elevation, is located on the eastern edge of Kupreanof Island, directly across the Wrangell Narrows from Petersburg to the northwest. Access is by helicopter. The site is currently occupied by an Alascom microwave facility for point-to-point telephone link. The site designation is one acre.

- Low power radio coverage would include an area of 360 square miles and a population of 2,000 people
- High power radio coverage would include an area of 870 square miles and a population of 3,000 people

Petersburg Mountain covers very little area and does not communicate with Wrangell.

**Zarembo Site**

- SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 1, T. 64 S., R. 80 E., CRM
- Latitude: 56°20'45"
- Longitude: 132°51'35"

Zarembo Peak, 2,444 feet in elevation, is located near the center of Zarembo Island. Access is by helicopter or by road to within  $\frac{1}{2}$  mile. The site is currently occupied by an abandoned Forest Service VHF/UHF link facility, and by a Coast Guard facility. The site designation is two acres.

- Low power radio coverage would include an area of 2,750 square miles and a population of 2,000 people
- High power radio coverage would include an area of 5,620 square miles and a population of 4,000 people

The Zarembo site does not provide line-of-sight coverage to Petersburg. VHF/UHF coverage is limited to the north.

**Sites Not Designated**

Maps of the coverage for most of these sites are available for viewing at the Supervisor's Office in Petersburg. Mapped coverages are not currently available for those sites without latitude and longitude figures.

**Red Bay Mountain**

- SW $\frac{1}{4}$ sec. 20, T. 65 S., R. 78 E., CRM
- Latitude: 56°13'05"
- Longitude: 133°22'28"

Red Bay Mountain, 3,042 feet in elevation, is located on the north edge of Prince of Wales Island. Access is by helicopter. The site is currently occupied by a Forest Service VHF/UHF link facility. However, it is designated only for administrative use by the Forest Service. The site designation is one acre.

- Low power radio coverage would include an area of 4,300 square miles and a population of 2,000 people
- High power radio coverage would include an area of 7,320 square miles and a population of 5,000 people

Red Bay Mountain is not designated for commercial radio use and does not communicate with Petersburg.

## **2 Alternatives**

### **Rocky Top Summit**

- NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 27, T. 61 S., R. 80 E., CRM

This site is 2,690 feet in elevation and would not provide radio access to Wrangell and all points north to northeast of Crystal Mountain, including no line-of-sight access to Petersburg. This site would require major blasting to provide space for a communication site.

### **Woronkofski Mountain**

- NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 20, T. 63 S., R. 83 E., CRM
- Latitude: 56°23'15"
- Longitude: 132°29'15"

Woronkofski Mountain, 3,240 feet in elevation, is located on Woronkofski Island, west of Wrangell. Access is by helicopter.

- Low power radio coverage would include an area of 2,610 square miles and a population of 3,000 people
- High power radio coverage would include an area of 5,640 square miles and a population of 5,000 people

Woronkofski is not a designated communication site and it does not provide line-of-sight coverage to Petersburg.

### **2648 Site**

- SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 25, T. 61 S., R. 80 E., CRM

This site is 2,648 feet in elevation and would provide no line-of-sight path for radio coverage to Petersburg.

### **2600 Site**

- SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 20, T. 61 S., R. 80 E., CRM

This site is 2,600 feet in elevation and would not provide access to the Wrangell area, southern Mitkof Island, and Point Frederick. The site also does not have enough physical space for a communication site.

### **2740 Site**

- NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 12, T. 61 S., R. 80 E., CRM

This site is 2,740 feet in elevation. The topographic character of this site would block all line-of-sight radio access south of Crystal Mountain, including Wrangell.

### **Combination Sites**

#### **2648 Site & 2740 Site**

- 2648 Site: SE $\frac{1}{4}$ , SW $\frac{1}{4}$ sec. 25, T. 61 S., R. 80 E., CRM
- 2740 Site: NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 12, T. 61 S., R. 80 E., CRM

Sites 2648 and 2740 together could cover a similar geographic area as Crystal Mountain; however, the two sites cannot communicate with one another due to a 2,800-foot ridge between them.

#### Lindenberg Combinations

A few sites provide good coverage in combination with Lindenberg Peak. The combination of Lindenberg and Zarembo was chosen for the two-site comparison with Crystal because it provides line-of-sight coverage to Petersburg and Wrangell as well as line-of-sight communication between Lindenberg and Zarembo, \*and because both are already designated.\* Navy Peak and the Etolin Site were not selected because they do not communicate with Lindenberg Mountain. Although Sumner talks to Wrangell, it was not chosen because its coverage is so close to that of Lindenberg. Woronkofski was not chosen because of concerns about the lack of developable space on the summit and anticipation of recreation issues similar to those already encountered on Crystal. As a result, these combinations were deferred in favor of the combination of Lindenberg and Zarembo.

### Identification of the Forest Service Preferred Alternative

The Forest Service preferred alternative is to select Alternative 1 and designate Crystal Mountain as a communication site. Crystal Mountain could provide line-of-sight radio communications between Petersburg and Wrangell, low power coverage of much of the rural areas and waterways on the Stikine Area, and high power coverage of 6,750 square miles and a population of 7,000 people.

None of the other alternatives can provide both the coverage and reliability possible on Crystal. Sumner cannot cover Petersburg at low power levels, which could mean up to half of the proposed service could not be offered. The combination of Lindenberg/Zarembo is less reliable than Crystal Mountain and so much more costly it is doubtful the services would be offered.

### Alternatives Considered in Detail

These alternatives address the request by the applicant to designate Crystal Mountain as a communication site, \*and they address the need to consider whether viable alternatives exist.\* They do not address the site-specific information required for authorizing a permit. A second environmental analysis would be required to establish a site plan and authorize a permit.

\*The Forest Service developed three alternatives for detailed analysis, including designation of Crystal Mountain, designation of Sumner Mountain, and no-action, based on the extent to which the services could be provided from two existing sites, Lindenberg and Zarembo Mountains.\* Each alternative provides for protection of resources; each responds to varying degrees to communication needs and compatibility with recreation use; and each addresses the issues identified in Chapter 1. However, each alternative allows for a different mix of benefits and tradeoffs that emphasize different values and uses.

## \*Designation Analysis Limits\*

\*The following limits are assumed for the purpose of assessing impacts in the Consequences section. Chapter 4 describes the consequences of each alternative assuming these limits.\*

### \*Location and Size of Designation\*

1. \*Designation is authorized for one acre assuming a permit would be authorized for less than one acre. By designating an acre, the Forest Service can consider different locations to be considered in an analysis of proposal for special use permit.\*
2. \*Location and boundaries are any shape contiguous with the summit.\*

### \*Shelter\*

3. \*Maximum building size: 8 feet wide by 8 feet tall by 12 feet long.\*
4. \*All foundations shall be removable and shall not extend beyond the exterior of the shelter.\*

### \*Power Supply\*

5. \*Power source: propane, diesel, solar, and electric powerline can be proposed and considered.\*
6. \*Maximum fuel storage 2000 gallons, in 500 gallon tanks, regardless of fuel type.\*
7. \*Powerline must be buried or rest on surface at locations above the timberline.\*

### \*Antennas\*

8. \*Antenna height maximum not limited in designation due to variations in technical requirements depending on selection of location on summit.\*
9. \*Maximum microwave dish diameter: 3 feet.\*
10. \*No guywires allowed on antennas or towers.\*

### \*Access\*

11. \*Access for communication site by foot and by helicopter.\*
12. \*Maintain public access for recreation and other uses; no fencing or perimeter restrictions allowed.\*

### \*Additional Limits\*

13. \*No lights allowed on antennas, towers, or exterior of facility.\*
14. \*Construction shall not cover or obstruct any ponds within the area of designation.\*
15. \*The entire facility must be removed and the site restored to natural condition if it becomes obsolete, is no longer used, or the permit is terminated.\*

Alternative 1Designate Crystal Mountain

- SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 13, T. 61 S., R. 80 E., CRM
- Latitude: 56°35'05"
- Longitude: 132°51'55"

**Description**

Alternative 1 would designate a communication site on Crystal Mountain and would amend the Forest Plan to include Crystal Mountain in the list of designated communication sites. The applicant could apply for a special use permit to provide radio, radio telephone, common carrier microwave, commercial microwave, and data transfer communication services, as proposed.

Island: Mitkof

Management Area: 16/17

Value Comparison Unit (VCU): Edge of 451 and 452, near intersection with 448

Elevation: 3,317 feet

\*Crystal Mountain is located on the southwest portion of Mitkof Island, south of Blind Slough and Blind River Rapids.\*

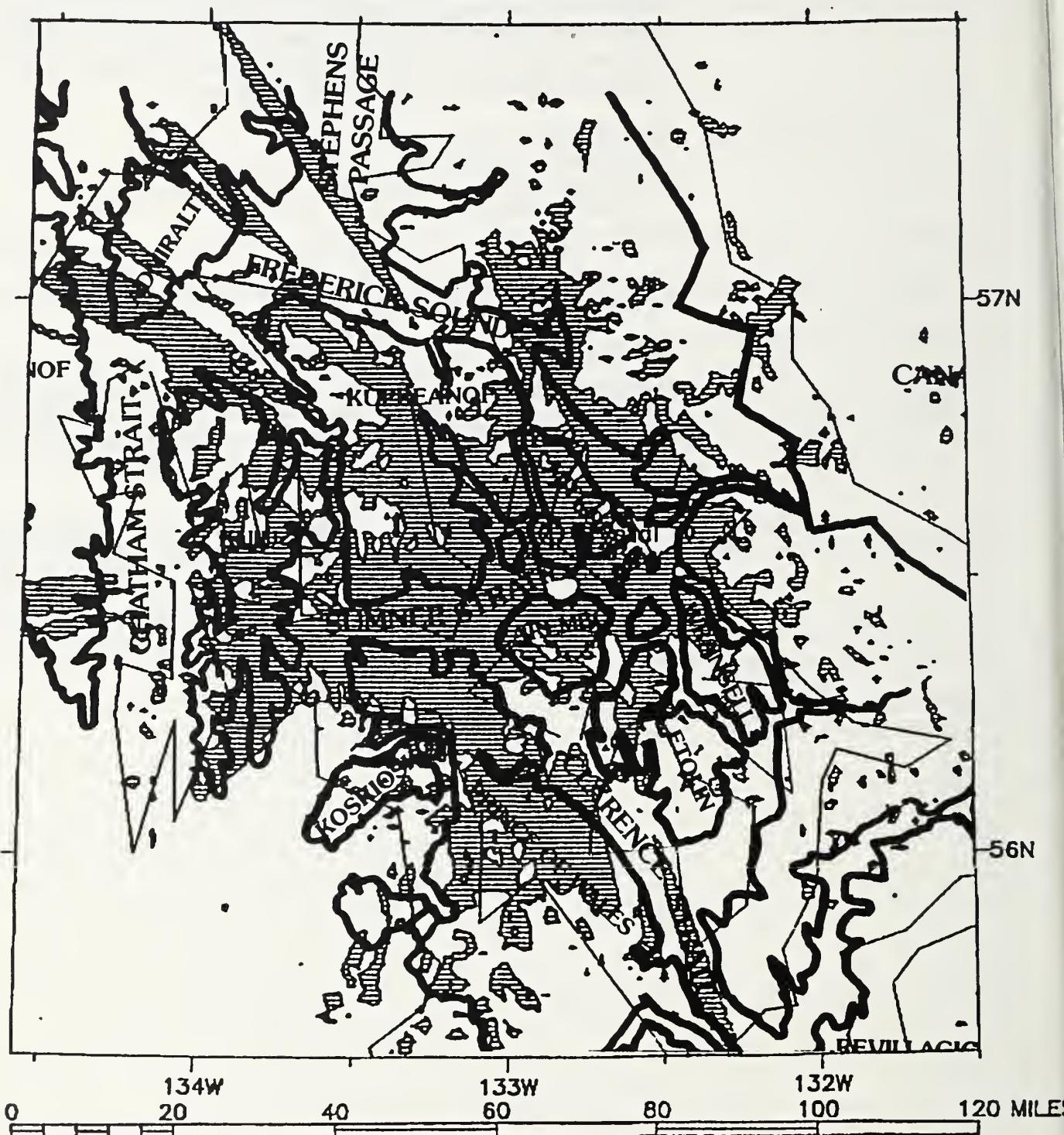
**Low Power Coverage:** An area of 3,550 square miles and a population of 5,000 people. Coverage includes Wrangell, Petersburg, Coffman Cove; Sumner Strait, Duncan Canal,  $\frac{1}{2}$  of Clarence Straight, Frederick Sound, and the Stikine River; Zarembo, northern Prince of Wales, Mitkof, and north Wrangell Islands, most of Kupreanof Island, the east  $\frac{1}{2}$  of Kuiu Island, and north Etolin Island (see Map 2-2).

**High Power Coverage:** An area of 6,750 square miles and a population of 7,000 people. Coverage includes much of the islands of Mitkof, Kupreanof, Kuiu, Zarembo, and the north end of Prince of Wales; the communities of Wrangell, Point Baker, Kake, Petersburg, Coffman Cove, and Port Alexander; much of Sumner Strait, Wrangell Narrows, Frederick Sound, Clarence Strait, Zimovia Strait, and the Stikine River (see Map 2-3).

## 2 Alternatives

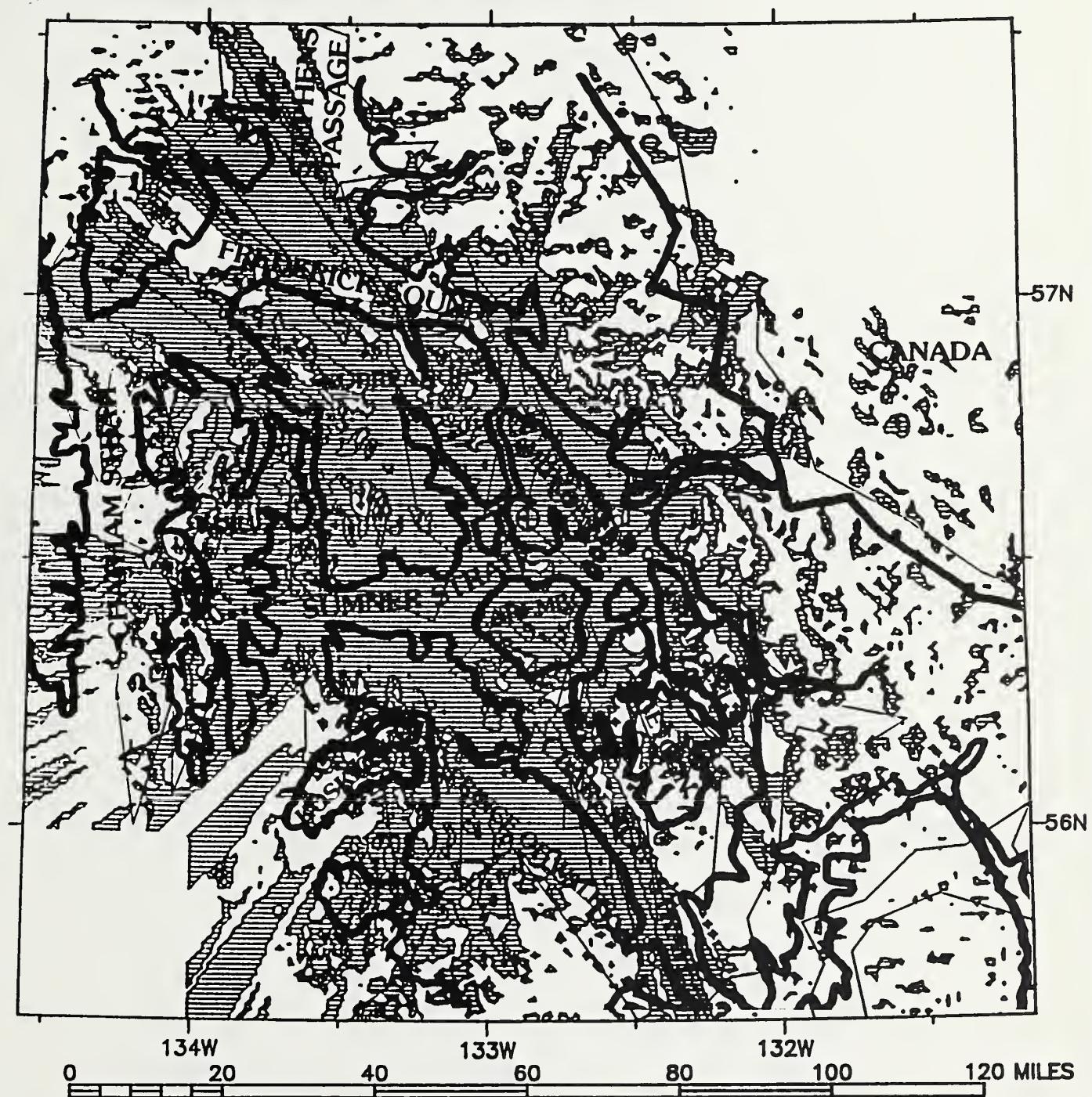
Map 2-2. Low Power Communication Coverage from Crystal Mountain

- 20 foot antenna height
- 200 megahertz frequency
- Communicating from low power, handheld radio or cellular phone (5 watts power with 0 dBm gain antenna, or 5 watts total power)



**Map 2-3. High Power Communication Coverage from Crystal Mountain**

- 20 foot antenna height
- 200 megahertz frequency
- Communicating from high power radio in boat, truck, or home (25 watts power with 6 dBm gain antenna, or 100 watts total power)



## **2 Alternatives**

### **\*Alternative 2 \***

### **\*Designate Sumner Mountain \***

- SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 26, T. 61 S., R. 80 E., CRM
- Latitude: 56°33'30"
- Longitude: 132°52'55"

### **\*Description\***

\*Alternative 2 would designate a communication site on Sumner Mountain and would amend the Forest Plan to include Sumner Mountain in the list of designated communication sites. The applicant could apply for a special use permit to provide radio, radio telephone, common carrier microwave, commercial microwave, and data transfer communication services, as proposed for Crystal Mountain.\*

\*Island: Mitkof

Management Area: 17

Value Comparison Unit (VCU): 452, near intersection with 448 and 451

Elevation: 2,730 feet\*

Sumner Peak is located on southwest Mitkof Island, south of Crystal Mountain.

**Low Power Coverage:** An area of 2,700 square miles and a population of 4,000 people. Coverage includes the communities of Wrangell, Point Baker, Coffman Cove;  $\frac{1}{2}$  of Zarembo Island, less than  $\frac{1}{2}$  Mitkof and northern Prince of Wales Islands,  $\frac{1}{3}$  of Kupreanof Island, small portions of Wrangell and Etolin islands; Sumner Strait, Duncan Canal, Wrangell Narrows,  $\frac{1}{2}$  Clarence Strait and Stikine River, small amount of Frederick Sound.

**High Power Coverage:** An area of 5,400 square miles and a population of 5,000 people. Coverage includes the communities of Petersburg, Wrangell, Point Baker, Coffman Cove, Kake; most of Mitkof, Kupreanof, and Zarembo Islands,  $\frac{1}{2}$  northern Prince of Wales, small portions of Wrangell and Etolin Islands; Sumner Strait, Duncan Canal, Wrangell Narrows, most of Clarence Straight,  $\frac{1}{2}$  Frederick Sound,  $\frac{1}{3}$  Zimovia Strait.

Map 2-4. Low Power Communication Coverage from Sumner Mountain

- 20 foot antenna height
- 200 megahertz frequency
- Communicating from low power, handheld radio or cellular phone (5 watts power with 0 dBm gain antenna, or 5 watts total power)



## 2 Alternatives

Map 2-5. High Power Communication Coverage from Sumner Mountain

- 20 foot antenna height
- 200 megahertz frequency
- Communicating from high power radio in boat, truck, or home (25 watts power with 6 dBm gain antenna, or 100 watts total power)



**\*Alternative 3\*: \*No-Action: Lindenberg & Zarembo\*****Lindenberg**

- SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 23, T. 59 S., R. 78 E., CRM
- Latitude: 56°44'50"
- Longitude: 133°04'30"

**Zarembo**

- SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 1, T. 64 S., R. 80 E., CRM
- Latitude: 56°20'45"
- Longitude: 132°51'35"

**\*Description\***

\*No action means no new sites would be designated. The proposed coverage can be provided from the combination of Lindenberg and Zarembo Summits, both of which are already designated as communication sites.\*

**\*Lindenberg\***

\*Island: Kupreanof

Management Area: Edge of 13 and 16

Value Comparison Unit (VCU): Edge of 439 and 447, near intersection with 437

Elevation: 3,249 feet\*

**\*Zarembo\***

\*Island: Zarembo

Management Area: 19

Value Comparison Unit (VCU): Edge of 457 and 458, near intersection with 459

Elevation: 2,444 feet\*

Lindenberg Peak is located on Kupreanof Island in the center of the Lindenberg Peninsula. The Zarembo site is located near the center of Zarembo Island.

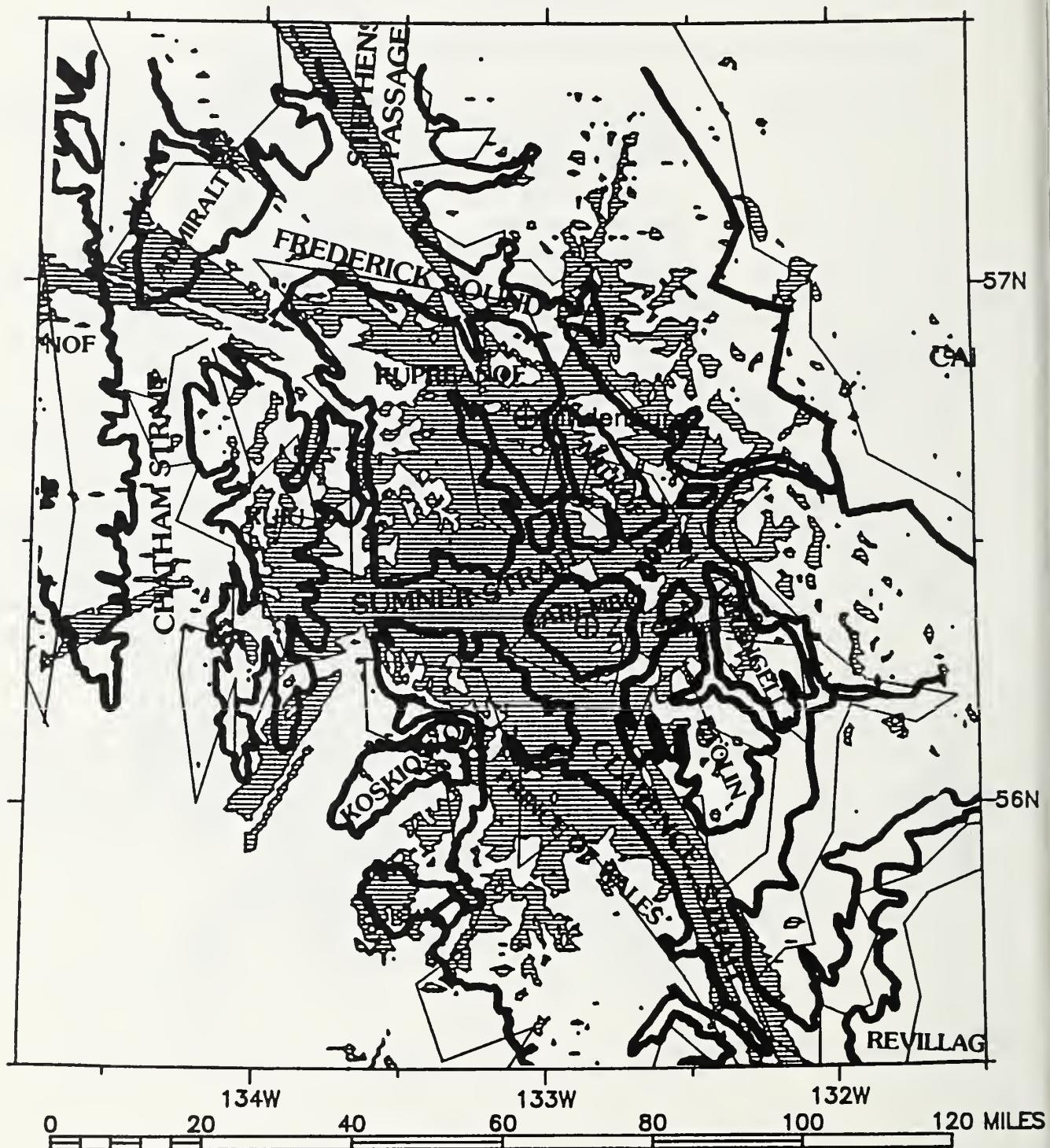
**Low Power Coverage:** An area of 4,000 square miles and a population of 4,000 people. The communities of Petersburg, Wrangell, Point Baker, Coffman Cove, Meyers Chuck; Zarembo Island, the north  $\frac{1}{2}$  of Prince of Wales,  $\frac{1}{2}$  of Mitkof, Kupreanof, and Wrangell Islands; Sumner Strait, Clarence Strait, Duncan Canal,  $\frac{1}{2}$  Stikine River,  $\frac{1}{3}$  Frederick Sound (see Map 2-7).

**High Power Coverage:** An area of 7,000 square miles and a population of 5,000 people. The communities of Petersburg, Wrangell, Kake, Point Baker, Port Alexander, Coffman Cove, Meyers Chuck; Zarembo and northern Prince of Wales Islands,  $\frac{1}{2}$  of Mitkof and Etolin Islands,  $\frac{1}{3}$  Wrangell Island; Sumner Strait, Clarence Strait, Duncan Canal,  $\frac{1}{2}$  Frederick Sound and Zimovia Strait (see Map 2-6).

## 2 Alternatives

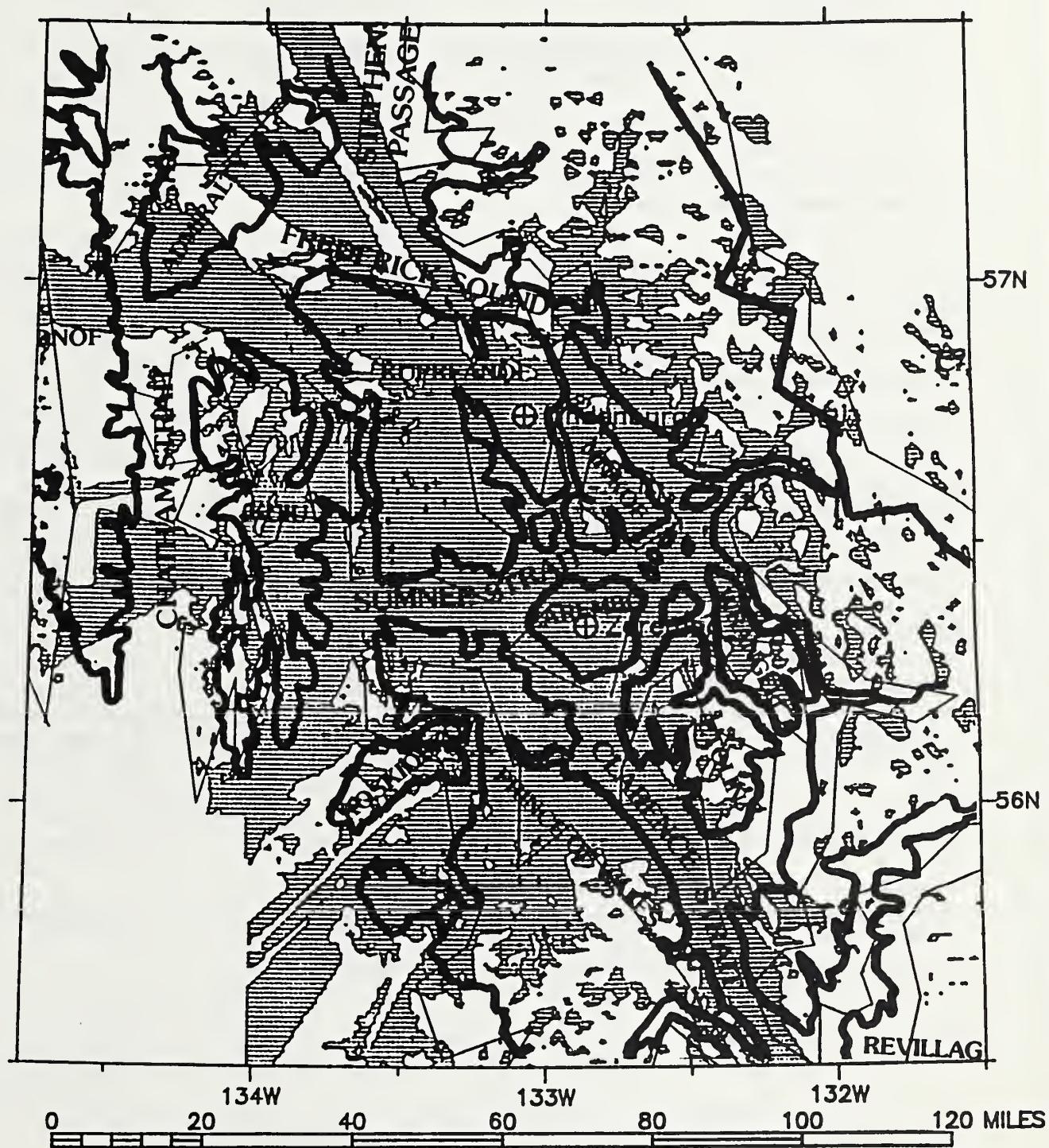
Map 2-6. Low Power Communication Coverage from Lindenberg/Zarembo

- 20 foot antenna height
- 200 megahertz frequency
- Communicating from low power, handheld radio or cellular phone (5 watts power with 0 dBm gain antenna, or 5 watts total power)



**Map 2-7. High Power Communication Coverage from Lindenberg/Zarembo**

- 20 foot antenna height
- 200 megahertz frequency
- Communicating from high power radio in boat, truck, or home (25 watts power with 6 dBm gain antenna, or 100 watts total power)



## Summary of Consequences

Table 2-1. Summary of Consequences

Consequences	Alt 1 Crystal	Alt 2 Sumner	Alt 3 Lindenberg/ Zarembo
<b>Direct Effects</b>			
Forest Plan	designates Crystal	designates Sumner	none
Summit	none	none	none
<b>Indirect Effects</b>			
<b>Meeting Communication Needs</b>			
Low Power	fully meets needs	misses Petersburg at low power	similar to Crystal, but covers more area and fewer people
High Power	fully meets	fully meets	fully meets
<b>Compatibility with Recreation Use</b>			
ROS	shift to SPM or RN	no change	no change
Rec Place?	yes	no	no
Access	remain same	remain same	remain same
Remoteness & Solitude	decrease	decrease	decrease
Scenery & Esthetics	decrease	decrease	decrease
Challenge & Accomplishment	no change	no change	no change
Number of Visits	more use over time though some may choose not to use	no change	no change
5-year Rec Plan	continue, with design consideration	not listed	not listed
Special Interest Area in Forest Plan Revision	still possible	not listed	not listed

Table 2-1. Summary of Consequences (continued)

Consequences	Alt 1 Crystal	Alt 2 Sumner	Alt 3 Lindenberg/Zarembo
<b>Visual Resource</b>			
Visual Sensitivity - View from Background - View Approach Summit - View From Summit	Crystal dominates facility dominates walk to view 360 degrees	Sumner dominates facility dominates walk to view 360 degrees	Lindenberg & Zarembo dominate facility dominates walk to view 360 degrees
Visual Quality Objectives - View From Background  - View Approach Summit	meet Retention VQO  probably can't meet Partial Retention	meet Modified VQO  meet Modified VQO	meet Partial Retention VQO on Lindenberg, Maximum Modification VQO on Zarembo  meet Partial Retention VQO on Lindenberg, Maximum Modification VQO on Zarembo
<b>Impact on Natural Resources</b>			
Soils and Geology	no change	no change	no change
Vegetation	200 square feet alpine covered	200 square feet covered	400 square feet covered
Watershed	no change	no change	no change
Wildlife	remote possibility of bird collisions	remote possibility of bird collisions	remote possibility of bird collisions
Threatened & Endangered Species (Plants & Animals) •Peregrine falcon	no effect anticipated	no effect anticipated	no effect anticipated
<b>Cost to Communication Users</b>			
Cost Factor	2.6	3.5	8.1
Hypothetical set of Services	\$26 \$260 \$2600	\$35 \$350 \$3500	\$81 \$810 \$8100
<b>Impact on Subsistence Users</b>			
Significant possibility of significant impact	no	no	no

## 2 Alternatives

Table 2-1. Summary of Consequences (continued)

Consequences	Alt 1 Crystal	Alt 2 Sumner	Alt 3 Lindenberg/Zaremba
<b>Impact on Cultural Resources</b>			
Clearance recommended	yes	yes	yes
<b>Cumulative Effects</b>			
Meeting Communication Needs	meet & expand	meet many needs	meet & expand
Compatibility with Recreation Use	access, views, trail plans still viable; likely to see more hikers with trail; diesel generator bulkier, noisier, more smell than propane; buried powerline less noticeable than propane tanks	no change in compatibility	no change in compatibility
Visual Resource			
Background Distance	mountain dominates	mountain dominates	mountain dominates
On Approach to Summit	facility dominates	facility dominates	facility dominates
<b>Impact on Natural Resources</b>			
Soils and Geology	none	none	none
Watershed	diesel containment required	diesel containment required	diesel containment required
Vegetation	some vegetation displaced by diesel fuel tanks and generator, or temporarily by buried powerline	some vegetation displaced by diesel fuel tanks and generator	some vegetation displaced by diesel fuel tanks and generator
Wildlife	a few animals may be displaced from immediate vicinity of diesel generator	a few animals may be displaced from immediate vicinity of diesel generator	a few animals may be displaced from immediate vicinity of diesel generator
Cost to Communication Users	increased development would mean increased service at rate compatible with 2.6 cost factor	increased development would mean increased service at rate compatible with 3.5 cost factor	increased development would mean increased service at rate compatible with 8.1 cost factor

# **Chapter 3**

## **Affected Environment**



# Chapter 3

## Affected Environment

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"The environmental impact statement shall succinctly describe the environment of the area to be affected or created by the alternatives under consideration. The descriptions shall be no longer than is necessary to understand the effects of the alternatives."

CEQ Regulations, 1502.15

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### Introduction

This chapter describes the environments that would be modified by the proposed designation. It describes the resource conditions and uses of the areas on Crystal, Sumner, Lindenberg, and Zarembo Mountains area without the proposed development, and serves as a baseline for comparing the consequences or changes (Chapter 4) as a result of each alternative (Chapter 2). The resources are described in terms of the seven issues identified in Chapter 1.

This information has been taken from more detailed reports that are available for public review in the planning record, located in the Stikine Area Supervisor's Office, Petersburg, Alaska. Sources of information include the 1990 Site Designation Environmental Assessment, the analysis developed for the 1990 site plan and permit authorization, resource reports, public comments, and field review by the 1990 Forest Service Team. Additional information on geology, soils, water, fisheries and wildlife values, vegetation, and climatic conditions were considered from other sources. These include the Analysis of the Management Situation (1990, Appendix C, Roadless Area; Appendix N, Subsistence), the Tongass Land Management Plan Final EIS (1979), and the Southeast Area Guide (1977). These documents are available at the Forest Supervisor's Office and the District Ranger's Office in Petersburg, Alaska.

## Crystal Mountain and Vicinity

Crystal Mountain is located in the southwest corner of Mitkof Island about 15 miles south of Petersburg (SW ¼, NW ¼, Section 13, T61S, R80E, CRM). The mountain rises from sea level to 3,317 feet. Crystal Lake, 240 acres in size, lies north of Crystal Mountain in a steep-sloped cirque. Large rock outcrops are abundant along the ridge and near the summit. Small mountain ponds are dispersed along the ridge with several located near the summit area. The northeast side of Crystal Mountain drains into Crystal Lake, which is the water source for the State's Crystal Lake fish hatchery and for residents of the hatchery. The dam also directs water to a generating plant at Blind Slough that provides electricity to the community of Petersburg. \*The Land Use Designation is LUD III, to be managed for a variety of uses with emphasis on managing for uses and activities in a compatible and complementary manner.\*

## \*Sumner Mountain and Vicinity\*

\*Sumner Mountain is located in the southwest corner of Mitkof Island about 20 miles south of Petersburg (SE ¼, NW ¼, Section 26, T61S, R80E, CRM). The mountain rises steeply from sea level to 2,730 feet and the summit is steep and rocky. The Land Use Designation is LUD III, to be managed for a variety of uses with emphasis on managing for uses and activities in a compatible and complementary manner.\*

## \*Lindenberg Mountain and Vicinity\*

\*Lindenberg Mountain, 3,249 feet in elevation, is located on Kupreanof Island in the center of the Lindenberg Peninsula. The Land Use Designation is LUD III, to be managed for a variety of uses with emphasis on managing for uses and activities in a compatible and complementary manner.\*

## \*Zarembo Site and Vicinity\*

\*Zarembo Peak, 2,444 feet in elevation, is located near the center of Zarembo Island. The Land Use Designation is LUD IV, with emphasis on intensive resource use, primarily on commodity or market resources.\*

## Meeting Communication Needs

The user groups targeted by the applicant are currently served by a number of designated sites as described in Chapter 2, \*but few of these are multi-user sites that offer a variety of services. Most are managed by single users such as Alascom, the Federal Aviation Administration, the Forest Service, and the Coast Guard. Lindenberg Mountain is the only designated site on the Stikine Area that provides multi-user services at this time.\*

<b>Crystal Mountain</b>	A communication structure operated *in trespass* on the Crystal Summit from May 1986 through August 1990, when the applicant removed it *at the request of the Forest Service.* There are no communication facilities on Crystal Mountain now.
<b>*Sumner Mountain*</b>	*There are no communication facilities on Sumner Mountain now, nor is there any history or proposal for facilities on Sumner.*
<b>*Lindenberg Mountain*</b>	*Lindenberg Mountain is designated as a communication site and is occupied by a Forest Service VHF/UHF link station and a multi-user, special use permit to Alaska Commercial Electronics.*
<b>*Zarembo Site*</b>	*Zarembo Site is designated as a communication site and is occupied by an abandoned Forest Service VHF/UHF link facility, and by a Coast Guard facility.*

## Recreation Use Compatibility

Supply of recreation opportunities will be discussed using the Recreation Opportunity Spectrum (ROS) system, and will incorporate inventories of roadless areas and recreation places. Quality of recreation opportunities will be examined through discussions on accessibility and the values provided. Demand will be examined looking at present and potential users.

\*This Final EIS describes the recreation value to users primarily in *qualitative* terms, including quotes from users, because the *quantitative* methods don't seem appropriate or helpful. One recreationist may value keeping the summit natural at all costs while another might be easily willing to share a recreational place with another use. People can argue forever about cost methodologies and relative value factors, but the heart of the matter is differences in values. Arguing about equations only prolongs the decision-making process without clarifying issues or resolving differences.\*

### Recreation Supply

#### Recreation Opportunity Spectrum

The entire Forest was inventoried using the ROS concept. In a nutshell, the ROS system identifies a continuum of recreation opportunities, from urban to primitive. Certain recreation activities are preferred in certain settings, and the ROS inventory identifies which areas inherently provide for those activities.

**Crystal Mountain:** The Crystal Mountain area is part of a larger roadless area identified as "Crystal" in the \*Analysis of the Management Situation (Draft EIS, Forest Plan Revision).\* The roadless area is identified as having 19,293 acres in a roadless condition, almost twice the size of the next biggest roadless area on Mitkof Island, which is "East Mitkof" (10,250 acres). Both areas have pending state land selections within them. The ROS setting for the Crystal Mountain area is inventoried as semi-primitive non-motorized (SPNM), the largest core of any of the primitive or semi-primitive classifications on Mitkof Island.

**\*Sumner Mountain:** The ROS setting for the Sumner Mountain area is inventoried as Roaded Modified (RM), where non-recreation activities and structures are often very evident. Low concentrations of human-caused sights and sounds in a back-country roaded setting are preferred, and remoteness from continuous sights and sounds of human activity is expected.\*

### **3 Affected Environment**

**\*Lindenberg Mountain:** The ROS setting for the Lindenberg Mountain area is Semi-Primitive Non-Motorized (SPNM), where alternations are few and appear subordinate to the landscape. Low concentrations of people in a roadless back-country setting are expected and nearby sights and sounds of human activity are rare, but distant sights and sounds may occur.\*

**\*Zarembo Site:** The ROS of the Zarembo Site is Semi-Primitive, Non Motorized. The area to the southwest of the site is still in a Semi-Primitive, Non Motorized state while the remaining area for 270° is surrounded by logging.\*

#### **Recreation Place**

Since not all area is realistically available for certain activities given logistical, access, and amenity needs, the recreation place concept was created, based on research done in southeast Alaska. Recreation places identify those settings which contain an attractor or amenity, and which receive known recreation use. ROS can be viewed as a landscape approach to inventory, while recreation places can be viewed as the site approach to inventory. The Tongass roadless inventory in the Analysis of the Management Situation (AMS) is also used to identify alternative opportunities and values.

**Crystal Mountain:** The actual mountain of Crystal Peak is inventoried as a recreation place (#21006.02). The peak rises to a height of 3,317 feet, over 700 feet above the next highest point on Mitkof Island. This place is within the SPNM setting, and lists the primary activities as hiking and viewing scenery. Skiing is also a known use of the area in the late winter and spring time. A companion recreation place is inventoried just to the east (#21006.01), and incorporates the informal trailhead area on the Snake Ridge road (#40006). This site is within the Roaded Modified (RM) setting classification, and lists hiking and 4X4 driving as the principle activities.

**\*Sumner, Lindenberg, and Zarembo Sites:** These mountains have not been identified as "recreation places" in the Tongass inventory.\*

#### **Recreation Quality**

##### **Access**

One of the primary values in identifying recreation places is their accessibility. Because of the rugged, remote, and maritime nature of the forest, recreation places often manifest themselves based on the degree of access. Thus, recreation places accessible by a road system, such as Mitkof Island, are generally more valuable in providing recreation opportunities to a greater segment of the population.

**Crystal Mountain:** The Crystal Mountain area is easily accessible by vehicle, and the peak is approached on foot by two informal routes. The Mitkof Highway provides paved access to the Crystal Lake hatchery site, which is a known jumping off point for recreationists using the pipeline route to access the ridgeline. This access is available year around. The Snake Ridge Road provides access for high clearance vehicles on the east flank of Crystal Ridge, to an elevation of around 900 feet, and provides for a convenient and quicker access to the ridgeline than the hatchery site. However access is limited to the summer months.

**\*Sumner Mountain:** Access is by foot or helicopter. There is no trail, however, road 6245 passes within ½ mile of the summit. Helicopter access is difficult due to the steep, rocky nature of the summit.\*

\***Lindenberg Mountain:** Access to the summit is by helicopter. One could also gain access by boat to the Tonka Log Transfer Facility, drive the road system, and then hike in, but this would be difficult given the steepness of the sides of the peak.\*

\***Zarembo Site:** Access is by helicopter, or by boat to the island, by vehicle to within ½ mile, and then by foot.\*

The other primary values are more difficult to quantify, but are part of the recreation experience, which is unique to each individual. Collectively, several values seem to surface repeatedly for the recreation places. They can be summed up in the following:

#### Remoteness and Solitude

**Crystal Mountain:** Many people have commented on the perceptions of remoteness and the relative degree of solitude the area provides for individuals. There are many obvious examples of areas in southeast Alaska which provide this to a much greater degree. However relative to Mitkof Island, this area does provide a fair degree of remoteness and solitude greater than others on the island. This is related to the fact the area is part of the largest roadless area on Mitkof Island.

\*At the same time, the recreation experience also includes a number of sights and sounds of human presence, including a water pipeline, a dam, airplanes flying to and from Wrangell, and a view of roads, clearcuts, and barge traffic.\*

\***Sumner Mountain:** There is no development on the summit or in the immediate area. The area would offer a high degree of remoteness and solitude if it were used for recreation. Some sights and sounds of human activity are present, including airplanes and views of roads.\*

\***Lindenberg Mountain:** Two communication facilities sit on the summit, accompanied by occasional helicopter traffic.\*

\***Zarembo Site:** The Zarembo site is remote in terms of the difficult access but the surrounding timber harvest activity and lack of use do not suggest that remoteness and solitude on the Zarembo site are valued by recreation users.\*

#### Scenery and Esthetics

**Crystal Mountain:** The views from the summit and ridgeline are outstanding. In addition to the views, the visitor travels through a variety of natural settings, which include forest, muskeg, rock (and often snow and ice), and alpine. This array of settings adds an element of diversity to the recreation experience. This variety is worth the effort for many, and the view from the top is an additional reward.

\***Sumner Mountain:** The views from the summit are impressive and the steep, rocky summit adds an element of interest.\*

\***Lindenberg Mountain:** The view is impressive from the summit. The appearance of the summit itself is influenced by the presence of the communication facilities.\*

\***Zarembo Site:** The Zarembo site is not noted for its scenery or aesthetics.\*

### **3 Affected Environment**

#### **Challenge and Accomplishment**

**Crystal Mountain:** There is a certain inherent challenge in attaining the summit of any peak one sets out on. The degree of challenge is often altered by the individual to achieve one's objective. For instance, some peaks or routes chosen may have a higher degree of technical knowledge for accomplishments, or time may be the criteria in which to test one's mettle. Crystal Mountain provides a degree of challenge and accomplishment for many individuals, over several seasons and activities.

\***Sumner Mountain:** Access is a major challenge, with no trail, no alpine hiking, and a steep, rocky summit. Hiking to the summit would be a substantial accomplishment.\*

\***Lindenberg Mountain:** Access to the vicinity is a major challenge in itself, in addition to scaling the steep sides of the mountain itself.\*

\***Zarembo Site:** While reaching this site involves considerable challenge, the Forest Service has no knowledge of recreation users seeking challenge or accomplishment on the Zarembo Site.\*

#### **Recreation Place Values**

In an effort to identify values for recreation places, several categories were identified for the inventory. The two recreation places, Crystal Mountain and the trailhead to it, were identified as having high values in several categories. These include facilities investment (or high potential for), home range of communities, and importance to tourism. The other categories include important and quality hunting and fishing, and marine recreation. (Another category used included public scoping. However it soon became apparent those recreation places in areas of proposed development received much public comment, as opposed to those not in an area of proposed activity. Thus, this was not a good measure of the relative value of one recreation place over another.) In other words these recreation places were recognized for their current use, as well as their potential uses and values, to the local community, tourism industry, and present and potential recreationists.

#### **Recreation Demand Number of Visits**

**Crystal Mountain:** Use estimates for Crystal Mountain, which includes use of the ridgeline as well as the summit, range from 0-250 visits per year. \*This means at least one person interviewed believed that no-one really hikes to the top of Crystal Mountain.\* No comprehensive information is available. After talking with numerous sources, which include Forest Service personnel, external publics, and the hatchery manager, a range of 50 - 100 seems fairly realistic. Most use occurs in the spring and summer. The area is known to be used in the spring for skiing activities, particularly once road access is shortened by snow melt in lower elevations. Summertime hiking is the primary activity, with most trips likely to be day outings; however, some overnight use is known to occur.

\***Sumner Mountain:** There is no known recreational use of the Sumner Summit.\*

\***Lindenberg Mountain:** There is no known recreational use of the Lindenberg Summit.\*

\***Zarembo Site:** There is no known use of the Zarembo Site for recreation.\*

**District 5-year Recreation Plans**

Existing and potential use of the area was brought out during the recent scoping effort and results for the Petersburg and Wrangell Ranger District 1991-1996 Recreation Plan. Hiking opportunities to alpine settings in the generic sense was rated high by many of the communities.

**Crystal Mountain:** Crystal Mountain was identified as a location to meet that opportunity, and ranked sixth out of two hundred projects. Internally, Crystal Mountain was identified several years back by recreation specialists on the area as having high recreation potential. As a result of both efforts, the Crystal Mountain Trail, trailhead, and improvements to the road leading there, were identified for inclusion in the regional capital investment program for recreation. At this time, the trail appears to be funded in FY'92 for planning, and FY'93 for construction. A trail on Crystal Mountain was also identified in the 1986-1991 District Recreation Plan but funds were not available for construction.

In developing the 1991-1996 Recreation Plan, the Petersburg Ranger District gathered project ideas from hundreds of citizens in Petersburg, Kake, Point Baker, Port Protection, and Rowan Bay. Representatives from each community volunteered to work closely with the team throughout 1990 to develop a plan that included recommendations for at least one project or one emphasis in each community. The proposed Crystal Mountain trail received one of the highest ratings in the plan and was placed on the Alaska Region Capital Investment Project list.

The early stages of design for the trail include these preliminary objectives:

- Provide access to an alpine setting for a wider range of population than currently provided
- Maintain the integrity and naturalness of the alpine environment
- Build the trail to a standard More-Difficult or Most-Difficult (from 2/11/91 memo on Crystal Mountain Trail Design Narrative).

**\*Sumner, Lindenberg, and Zarembo:** There are no plans for the Sumner Mountain, Lindenberg Mountain, or Zarembo Site areas in the District 5-year recreation plans.\*

**\*History of Local Effort to Protect Recreation from Development\***

**Crystal Mountain:** As early as the Forest Service's first effort to solicit public input for the forest planning process in 1977, people indicated strong concern for recreation and esthetic values around Blind Slough. Early in the 1980s, Alaska Department of Fish and Game and members of the public expressed concern about placing the Tyee powerline on the slough side of the tree fringe along the highway. As a result, the Forest Service placed the line along the road side of the tree fringe. Between 1982 and 1985 there was considerable opposition to construction of a road associated with the Mitkof Flyer timber sale. The road would have run along the south side of Blind Slough and opened the way for timber cutting and general development in that area. The road was not built and the timber sale was split into three smaller sales. In 1988 there was considerable opposition to the National Guard shooting range, proposed off the Snake Ridge Road, near Blind Slough. The range was never constructed. In 1990 and 1991, many people requested that Blind Slough and Crystal Mountain be designated as a Special Interest Area in the Forest Plan Revision. This interest was also expressed in the 1991-1996 Petersburg Recreation Plan.

**\*Sumner, Lindenberg, and Zarembo:** There is no record of any special efforts to protect these areas from development beyond the LUD III Forest Plan designations for Sumner and Lindenberg Mountains.\*

### **3 Affected Environment**

#### **Special Interest Area**

**Crystal Mountain:** From a larger perspective, the opportunities for recreation on Crystal Mountain complement other recreation opportunities in the Blind Slough and Ohmer Creek areas, all within a few miles of the Mitkf Highway. These three areas offer a variety of recreation opportunities, unique in the sense they are all within close proximity. One can camp at Ohmer Creek Campground, fish in the morning there, drive 4 miles to Blind Slough and picnic or swim in the afternoon, drive back to the campground and/or drive up the Snake Ridge road to the flank of Crystal Mountain, and hike up to the open ridgeline in the early evening, then return to one's campsite. These opportunities are also possible for visitors staying in town. Recognition of this variety, as well as the diversity of settings within this area, is demonstrated in the identification of this area as a "Special Interest Area" land use allocation with emphasis on zoologic and scenic values, to be considered in draft Forest Plan Revision alternatives.

**\*Sumner, Lindenberg, and Zarembo Sites:** None of these areas have been proposed as Special Interest Areas in the Forest Plan Revision.\*

#### **Local Users and Visitors from Out of Town**

**Crystal Mountain:** Demand for these opportunities is primarily by local users. However the local tourism industry and Chamber of Commerce have recognized the segment of potential visitors they wish to attract as being the "adventure traveler." This array of opportunities could easily be packaged and marketed for this segment, with a fairly high degree of success. The opportunities would be self discovery, low cost, easy access, and a large taste of the "Alaskan Experience."

**\*Sumner, Lindenberg, and Zarembo Sites:** Because these areas are not used for recreation, there is no distinction to make between local users and visitors from out of town.\*

#### **The Recreation Experience (selected quotes)**

These quotes are taken from letters from the public scoping process in 1989, 1990, and 1991. They have been selected on the basis of describing the nature of the recreation experience for those people using the mountains in this EIS.

#### **Crystal Mountain**

"The top gives a stunning view of Duncan Canal, [Wrangell] Narrows, Sumner Straight, and the mainland mountains. There is no other place I know on the island that is as easy to reach that offers anywhere near as beautiful a hike. I have climbed it several times and camped on the ridge part way up."

"One of my most vivid and precious memories is of sitting on the top on a windy August day and watching a dozen or more eagles, hawks, and ravens playing in the winds, soaring so close to me I could hear the wind in their wings."

"[Crystal Mountain] is used extensively in winter for skiing and in summer for scenic hiking. Even those who do not wish to climb its summit admire it from below, as it is the backdrop for the entire Blind Slough area."

"One of our greatest pleasures after struggling for hours to get to the mountaintop is the excitement of feeling as if we are the first people to climb to new heights... even though foot prints in the trail inform us otherwise."

**\*Sumner, Lindenberg, and Zarembo Sites\***

\*No comments were received regarding recreation on these mountains.\*

# Visual Resource

## Landscape Character

### Crystal Mountain

Crystal Mountain and the surrounding area provide a unique alpine setting within easy access from the community of Petersburg. The rock outcroppings, windswept vegetation, and small alpine lakes and ponds create a spectacular and distinctive landscape. Using the nationally recognized Visual Management System, this area is rated as having a Variety Class A landscape (distinctive) in the Coastal Hill Character Type.

#### \*Sumner Mountain\*

\*Sumner Mountain is rated as having a Variety Class B landscape (common) in the Coastal Hill Character Type.\*

#### \*Lindenberg Mountain\*

\*Lindenberg Mountain is rated as having a Variety Class A landscape (distinctive) in the Kupreanof Lowland Character Type.\*

#### \*Zarembo Site\*

\*The Zarembo area is rated as having a Variety Class B landscape (common) in the Kupreanof Lowland Character Type.\*

## Visual Sensitivity

The peak is visible from a number of viewpoints and the view from the peak is also considered.

### Crystal Mountain

**View From Mitkof Highway, Wrangell Narrows, & Blind River Rapids:** Crystal Mountain appears as part of the background when viewed from Mitkof Highway, Wrangell Narrows, and the Blind River Rapids (see Figure 3-1). Crystal Mountain appears as a dominant landform from each of these areas, but the viewer is not able to observe detail from these background viewpoints, four to five miles away.



Figure 3-1. Crystal Mountain as Viewed from Blind River Rapids.

### 3 Affected Environment

**View From Blind Slough Picnic Area:** Crystal Peak is not visible from the Blind Slough recreation area. The western ridge of the Crystal Lake basin runs north from Crystal Peak, screening views to and from the recreation area.

The pipeline can be seen from the picnic area.

**View on Approach to Summit:** Crystal Lake and the ridge top alpine environment dominate the view when approaching the summit. As recreationists move along the trail, they can view Crystal Lake for a while before they can see the summit. Then, for a distance of a several hundred yards they can see both the lake and the summit at once. Recreationists view the summit in the immediate foreground as they approach (see Figure 3-2). The summit is often viewed as the destination of the hike up Crystal Mountain, with anticipation of a rewarding view from the top.

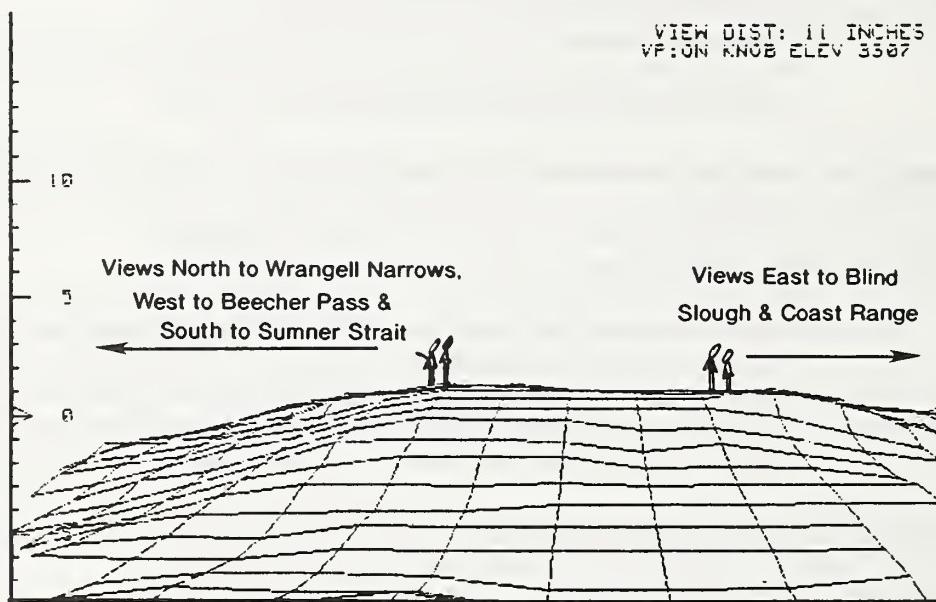


Figure 3-2. Crystal Summit as Viewed from the Summit Approach.

The portion of Crystal Mountain that faces onto Crystal Lake and the larger basin surrounding the lake is currently rated Sensitivity Level 2, where at least  $\frac{1}{4}$  and not more than  $\frac{3}{4}$  of the users have a major concern for the scenic quality of the area.

**View From Summit:** The summit provides a spectacular 360-degree panorama of Sumner Strait, Duncan Canal, Wrangell Narrows, and the Blind Slough Area.

#### \*Sumner Mountain\*

\*The site's central location in the Sumner Mountain Range limits its ability to be seen from the Wrangell Narrows or other sensitive viewpoints.\*

#### \*Lindenberg Mountain\*

\*The area is seen in the background distance from Wrangell Narrows, Mitkof Highway, and the flight path through Duncan Pass.\*

## Visual Quality Objectives

### \*Zarembo Site\*

\*The central location on Zarembo Island precludes visibility from Stikine or Clarence Straits. The area surrounding the site receives little or no use by the recreating public, reducing sensitivity. \*

### Crystal Mountain

The Visual Quality Objectives (VQO's) in the Crystal Mountain area are "retention" and "partial retention". In the "retention" setting, activities should not be evident to the observer. In areas of "partial retention", activities should be located and designed to be subordinate to the character of the area.

**Background Distance as Viewed from Wrangell Narrows, Mitkof Highway, and Blind River Rapids:** As seen in the background distance, the inventory VQO is "retention." This reflects the sensitivity level 1 rating of the Wrangell Narrows, Mitkof Highway and the Blind Slough area as well as the variety class A landscape character. In a "retention" setting, development activities should not be apparent to the observer.

**Foreground Distance -- Summit and Lake Basin as Viewed from Approach to Summit:** From the hiker's approach to the summit, the inventory VQO is "partial retention" for the summit and the Crystal Lake basin. In this setting, development activities may be apparent but should be designed to be subordinate to the characteristic landscape.

### \*Sumner Mountain\*

\*The VQO for the area is "modification", meaning management activities may dominate the characteristic landscape, but borrow from existing form, line, color, and texture. From this site, views of the valley to the northeast are dominated by past timber harvest and the connecting road system. Crystal Mountain is viewed in the middleground distance, two miles away.\*

### \*Lindenberg Mountain\*

\*The VQO is "partial retention", meaning management activities may be evident, but remain visually subordinate to the characteristic landscape.\*

### \*Zarembo Site\*

\*The VQO for the area is "maximum modification", meaning management activities may dominate the characteristic landscape.\*

## Natural Resource Conditions

## Soils and Geology

### Crystal Mountain

The area has intermittent exposed bedrock and thin soil layers supporting vegetation. Large rock outcrops are abundant along the ridge and near the summit, and cover 340 acres.

### \*Sumner Mountain\*

\*The area has very shallow alpine soils and non-vegetated bedrock.\*

### \*Lindenberg Mountain\*

\*Lindenberg Mountain is comprised of alpine soils of the Bunnybay-Hydaburg soil series.\*

### **3 Affected Environment**

#### **\*Zarembo Site\***

\*The area is comprised of high elevation, subalpine muskeg.\*

#### **Vegetation**

##### **Crystal Mountain**

Below 2,000 feet in elevation the area is dominated by poorly drained spruce-hemlock forest and muskeg. Above the 2,000 foot level the character of the land changes to a more dry, alpine ridgeline. Alpine habitats cover about 660 acres (Analysis of the Management Situation, p. C-139). The alpine vegetation consists of widely scattered, perennial herbs and dwarfed, woody plants. Some of the plants have ranges restricted to well-drained alpine ecosystems and are not common on the poorly-drained ecosystems or lower elevations on Mitkof Island.

##### **\*Sumner Mountain\***

\*The vegetation on Sumner Mountain includes sedges, deer cabbage, dwarf and bog blueberry, heathers, and cassiope. Other alpine plants may also be present.\*

##### **\*Lindenberg Mountain\***

\*The vegetation on Lindenberg Mountain includes sedges, deer cabbage, dwarf and bog blueberry, heathers, cassiope. Other alpine shrubs and forbs may be present. There are no known rare or sensitive plants likely to be present.\*

##### **\*Zarembo Site\***

\*The vegetation on the Zarembo Site include sedges, deer cabbage, Dwarf Mountain hemlock and Alaska cedar with blueberry, dwarf blueberry, bog blueberry, heathers, and cassiope. Other alpine forbs are also present.\*

#### **Watershed**

##### **Crystal Mountain**

Small mountain ponds are dispersed along the ridge, with several located near the summit area. Runoff occurs by filtering through the bedrock fractures or by surface and subsurface flow over rock or through soil.

##### **\*Sumner Mountain\***

\*There are no known streams on top of the ridge and they may be some small alpine water holes.\*

##### **\*Lindenberg Mountain\***

\*There are no known, defined stream channels at the top of the ridge. There may be some small alpine water holes.\*

##### **\*Zarembo Site\***

\*There are no known, defined stream channels at the top of the ridge. There are some muskeg ponds near the designated communication site.\*

#### **Wildlife**

The Stikine Area, as part of the Pacific Flyway, is an important migration corridor for many bird species. However, the corridor is fairly wide and none of the summits in this study are known to be used to any great extent by migrating birds.

**Crystal Mountain**

Sitka black-tailed deer, black bear, and wolves sometimes use the subalpine and alpine areas on Crystal Mountain. Crystal Mountain supports a breeding population of rock ptarmigan and willow ptarmigan, and is the only known breeding area on Mitkof Island for the American pipit. Canada geese use some ponds during the spring and fall. The uplifts created when winds hit the mountain attract bald eagles, red tail hawks, cranes, common ravens, and possibly falcons and accipiters, including the endangered Peregrine falcon. Bald eagles nest at much lower elevations, near the coast or other large bodies of water. No suitable eagle nesting habitat exists near the proposed designation. The small mountain ponds provide water sources for the wildlife during dry summer months after snow patches melt. During fall migration some bird species use the area for resting or foraging.

**\*Sumner Mountain\***

\*Sumner Mountain is used by many of the species that use Crystal Mountain, including Sitka black-tailed deer, black bear, and wolves. There are no known birds of special concern using Sumner Mountain. Peregrine falcons, like other falcons, accipiters, and cranes, may use the thermals surrounding the mountain to gain altitude. Ptarmigan and pipits are not known to use the area.\*

**\*Lindenberg Mountain\***

\*Sitka black-tail deer, black bear, and wolves all use the area surrounding Lindenberg Mountain. Few birds are likely to use the summit and none of special concern. Migrant species including Peregrine falcons may use the thermals to gain altitude while migrating.\*

**\*Zarembo Site\***

\*Sitka black-tail deer, black bear, wolves, and ptarmigan use the area surrounding Zarembo Site. Pipits may be present and Peregrine falcons may use the thermals to gain altitude when migrating.\*

**\*Threatened & Endangered Species\***

\*Peregrine falcons may well use the updrafts surrounding Crystal, Sumner, and Lindenberg Mountains during their annual migrations, though Forest Service biologists have not actually seen them on the sites in question.\*

## **\*Subsistence Use\***

\*Subsistence is vital to those Southeast Alaskans whose use of wild resources is critical to supporting their income, culture, or lifestyle. The Alaska National Interest Lands Conservation Act (ANILCA) provides for "the continuation of the opportunity for subsistence uses by rural residents of Alaska, including both natives and non-Natives, on the public lands." While there are a variety of cultural, popular, and sociological definitions and interpretations of subsistence, Congress addressed this subject in Title VIII of the 1980 Alaska National Interest Lands Conservation Act (ANILCA). Section 803 of the Law defines subsistence use as:\*

*\*The customary and traditional uses by rural Alaska residents of wild renewable resources for direct, personal, or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade.\**

### **3 Affected Environment**

#### **\*Subsistence Communities\***

##### **\*Petersburg\***

\*With a population of 4,150, Petersburg is located on the northern tip of Mitkof Island in east-central Southeast Alaska. Fourteen percent of Petersburg's population is Alaska Native. The community of Kupreanof is located less than one mile from Petersburg, across Wrangell Narrows on Kupreanof Island. Petersburg's main economic sector is seafood processing and manufacturing with the various governments being the second largest employer. Retail trade and construction make up the other economic sectors. Employment is seasonal in the manufacturing, retail, and construction sectors. Based on non-commercial harvest totals, deer accounts for 24 percent of the total edible pounds of subsistence resources harvested by Petersburg households (Smythe, 1988).\*

##### **\*Port Protection\***

\*Port Protection is located on the north tip of Prince of Wales Island. The combined population of Port Protection and Point Baker, separated by two miles of water, is 93 people, of which seven percent is Alaska Native. Both economies peak with summer and fall fishing. Most residents own fishing boats and choose to live here for the independent and subsistence lifestyle the area offers. The main economic sector for Point Baker and Port Protection is fishing, followed by retail trade, construction, and education services. Employment is highly seasonal in all sectors. Based on edible pounds harvested, salmon are the most important subsistence resource at 38 percent, followed by finfish other than salmon at 30 percent and deer at 13 percent (Kruse and Frazier, 1988).\*

##### **\*Wrangell\***

\*Wrangell is located on the northern tip of Wrangell Island near the Stikine River. Thirty-eight percent of the population of 2,913 is Native Alaskan. Timber, fishing, and fish processing dominate Wrangell's economy. More than 100 residents fish commercially and for nearly 50 percent of them, it's their major source of income. Tourism is also a growing influence in the area. Deer accounts for 14 percent of the total useable weight of subsistence resources harvested by Wrangell households (Cohen, 1989).\*

#### **\*Abundance and Distribution\***

##### **\*Crystal Mountain\***

\*Deer hunting has not been allowed on Mitkof Island since 1974, however, deer hunting will be allowed during the 1991 season for the first time in 17 years. Deer sometimes use alpine areas including the Crystal Mountain summit and ridge and subsistence users could choose to pursue deer in this area. Rock and willow ptarmigan both use the Crystal Summit and ridge and are hunted there.\*

##### **\*Sumner Mountain\***

\*The area around Sumner Mountain has been used historically for deer hunting by residents of Petersburg and Wrangell. The deer season on Mitkof Island will open again in 1991 after being closed since 1975.\*

##### **\*Lindenberg Mountain\***

\*The area around Lindenberg Mountain is used for hunting upland game birds by residents of Petersburg.\*

##### **\*Zarembo Site\***

\*The area in the vicinity of Zarembo Site is used for deer hunting by the communities of Petersburg, Wrangell, and Port Protection.\*

**\*Access to Resources\*****\*Crystal Mountain\***

\*Access to the Crystal Mountain area is by foot only.\*

**\*Sumner Mountain\***

\*Access is by foot only.\*

**\*Lindenberg Mountain\***

\*Access is by boat to the island, by vehicle to within ½ mile, and then by foot.\*

**\*Zarembo Site\***

\*Access is by road to within ½ mile and then by foot.\*

**\*Competition for Resources\***

\*Increased competition results when cheaper access to an area is provided. Access to each of the summits is limited by the effort and expense required. There is little competition for the wildlife resources on Crystal, Sumner, or Lindenberg Summits. Zarembo may have the greatest competition because it has the easiest access, but competition is still expected to be slight.\*

## **\*Cultural Resources\***

\*The study area is within the former territory of the Stikine Tlingit prior to Euro-American contact in the late 1700s. Cultural resource inventories conducted throughout southeast Alaska indicate the seashore and coastal environment was the focus of the activities of the people who have inhabited the area. With the exception of alpine areas on the mainland coast used for goat hunting, there is no evidence that prehistoric or historic people have regularly utilized the high peaks of southeast Alaska.\*

\*The Tongass National Forest cultural resource probability model indicates Crystal Mountain and the three alternate communication sites are situated within the low probability zone for cultural resources. The model designates all areas above 1,000 feet in elevation as having a low probability for cultural resources. Generally, low probability areas are not field checked for the presence of cultural resources.\*

**\*Crystal Mountain\***

\*The Crystal Mountain site was field checked, however, because of reports that rock cairns of possible prehistoric or historic origin were located in the affected area. Forest Service archaeologists conducted a complete cultural resource inventory of the Crystal Mountain site on August 17, 1990. No cultural resources were discovered. Small piles of rocks were observed outside the affected area. These are believed to be modern (less than 50 years old) and probably represent trail markers for the present route to the summit. There are no sites listed on or considered eligible for listing on the National Register of Historic Places within the study area.\*

**\*Sumner,  
Lindenberg,  
Zarembo\***

\*All three alternate sites are on peaks exceeding 2,400 feet in elevation, placing them well within the low probability zone for cultural resources. There are no sites listed on or considered eligible for listing on the National Register of Historic Places.\*

## Cost To Communication Users

The concept of economic efficiency applies only to proposed services, or variations on proposed services. Trying to describe the economic efficiency of "no proposed action" is like trying to multiply by zero, it doesn't make sense. In Chapter 4, costs to communication users will be compared among the alternate locations.

**Crystal \* & Sumner\* Mountains** There are currently no communication services provided from Crystal \*or Sumner Mountains and therefore no costs to communication users.

**\*Lindenberg Mountain\*** \*The hypothetical cost ratio for the current services on Lindenberg, based on site development estimates, is 2.6 cost units, compared to 2.6 for Crystal, 3.5 for Sumner, and 8.1 for the combination of Lindenberg and Zaremba. (See Chapter 4, Users Costs, for assumptions used in calculating hypothetical user cost ratios.)\*

**\*Zaremba Site\*** \*Although the Coast Guard operates a facility on Zaremba Site, there are currently no multi-user services and no cost.\*

# **Chapter 4**

## **Environmental Consequences**



# **Chapter 4**

# **Environmental Consequences**

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"[The environmental analysis should disclose the possibility of] diminished or lost recreation opportunities. [It should also] present information on the future expansion at the Crystal Mountain site, a reasonably foreseeable event given the site's advantage and the Interim Directive's direction to maximize the efficient use of sites."

Remand of 1990 Designation, 10/30/90

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## **Introduction**

The purpose of this chapter is to describe the direct, indirect, and cumulative effects of each alternative including the proposed Crystal Mountain communication site designation. A summary of the consequences of each alternative is displayed in Table 2-1 in Chapter 2. The information has been taken from more detailed reports that are available for public review in the planning record, located at the Stikine Area Supervisor's Office, Petersburg, Alaska.

## **Direct Effects**

Communication site designation is an amendment to the Forest Plan that allows communication uses to be considered. It does not permit any communication activities. There are no direct effects to Crystal Mountain \*or Sumner Mountain\* as a result of designating or not designating their summits. The only direct effect of designation would be a notation in the Forest Plan. \*Alternative 3 would result in no change in the Forest Plan because the Lindenberg and Zarembo Sites are already designated as communication sites.\*

## **Indirect Effects**

Indirect effects include the effects likely to occur \*as a result of implementing each alternative described in Chapter 2.\* Indirect effects include those anticipated in the eventual development or lack of development on the site. Indirect effects are described in terms of the seven issues identified in Chapter 1.

Indirect effects do not include site specific details such as the size of a structure or number of antennas. \*If a site is designated as a result of this EIS,\* site specific effects would be addressed in a separate site development analysis.

## Meeting Communication Needs

Tables 4-1 and 4-2 summarize the extent to which each alternative meets communication needs.

### Alternative 1

Alternative 1 would meet all the communication needs proposed by the applicant, including line-of-sight contact with Petersburg and Wrangell, coverage of 6,750 square miles, access to a population of 7,000 people, and good low power coverage of Petersburg, Wrangell, Kupreanof, Point Baker, and Coffman Cove. The major advantage of Crystal over Sumner is the low power coverage of communities and State land selections (see Table 4-1). The applicant estimates that up to 50 percent of his business may come from low power radio users, people who need radio communications to be "on call" in their businesses.

### \*Alternative 2\*

\*Sumner could provide line-of-sight coverage to Wrangell and to Scow Bay, on the outskirts of Petersburg, as well as a large portion of the area covered by Crystal Mountain. However, low power radio users from downtown Petersburg would not be able to reach Sumner. Sumner Mountain also cannot be reached by low power users on a sizable portion of Mitkof Island north of Crystal Mountain, where Crystal casts a shadow over Sumner's coverage.\*

\*On the NTIA maps, Sumner Mountain's coverage missed the downtown Petersburg area at low power by very little. As a result, the Forest Service requested additional analysis from NTIA regarding how Sumner Mountain might be made to reach Petersburg at low power. Figure 4-2 shows a line-of-sight analysis that demonstrates obstacles between Sumner and Petersburg. Figure 4-1 shows that there are no obstacles between Crystal Mountain and Petersburg at low power. The Forest Service also asked NTIA if a taller antenna on Sumner would help. NTIA ran another analysis that indicated the antenna would have to be 10,000 feet tall for Sumner to service Petersburg.\*

### \*Alternative 3\*

\*The combination of Lindenberg/Zarembo would provide line-of-sight communications to Petersburg and Wrangell as well as line-of-sight contact between the two sites. The combination is capable of reaching more square miles of area than Crystal but fewer people (see Table 4-2). The reliability of the service would decline because the dual site requires three sets of equipment to provide service, a set for each peak to communicate with customers and a third set to communicate between peaks. The chances of malfunction are greater with three sets of equipment and trouble-shooting would require more time to identify which part of the system required repair.\*

**Table 4-1. Comparison of Low Power Communication Coverage of Communities and State Land Selections**

Location	Crystal	Sumner	Lindenberg/Zarembo
Petersburg	yes	no	yes
Wrangell	yes	yes	yes
Point Baker	yes	yes	yes
Coffman Cove	yes	yes	yes
Blind Slough South <sup>1</sup>	yes	yes	yes
Thomas Bay <sup>1</sup>	yes	yes	yes
Wrangell Narrows <sup>1</sup>	yes	yes	yes
Coffman Cove <sup>1</sup>	yes	yes	yes
St. Johns Harbor <sup>1</sup>	yes	yes	yes
Duncan Canal <sup>1</sup>	yes	50%	yes
Frederick Point South <sup>1</sup>	yes	no	no

<sup>1</sup> State Land Selections

**Table 4-2. Extent to Which Each Alternative Meets Communication Needs**

Status/Coverage	Alt 1 Crystal	Alt 2 Sumner	Alt 3 Lindenberg + Zarembo = Ldbg/Zrbo		
<b>Designation</b> Designated	no	no	yes	yes	yes
<b>Population Covered</b>					
Low Power	5,000	4,000	3,000	2,000	4,000
High Power	7,000	5,000	4,000	4,000	5,000
<b>Area Covered (Sq. Mi.)</b>					
Low Power	3,550	2,700	2,000	2,750	4,000
High Power	6,750	5,400	4,090	5,620	7,000
<b>Control Link (Line-of-Sight)</b>					
Petersburg	yes	no <sup>1</sup>	yes	no	yes
Wrangell	yes	yes	no	yes	yes
<b>Water Areas, Low Power</b>					
Sumner Strait	62%	57%	37%	52%	66%
Clarence Strait	34%	18%	6%	59%	59%
Chatham Strait	9%	0%	10%	1%	11%
Frederick Sound	36%	19%	35%	2%	35%
Stikine River	78%	61%	17%	63%	70%
<b>Islands, Low Power</b>					
Mitkof Island	75%	48%	33%	25%	54%
Wrangell Island	15%	11%	3%	15%	17%
Zarembo Island	63%	61%	22%	87%	88%
Etolin Island	12%	8%	2%	21%	21%
N. Prince of Wales Island	32%	33%	15%	42%	45%

<sup>1</sup>Sumner Mountain is capable of communicating with Scow Bay, but not downtown Petersburg.

## 4 Environmental Consequences

Figure 4-1. Line-of-Sight Communication Capability between Crystal Mountain and Hungry Point, Which Includes All of Downtown Petersburg.

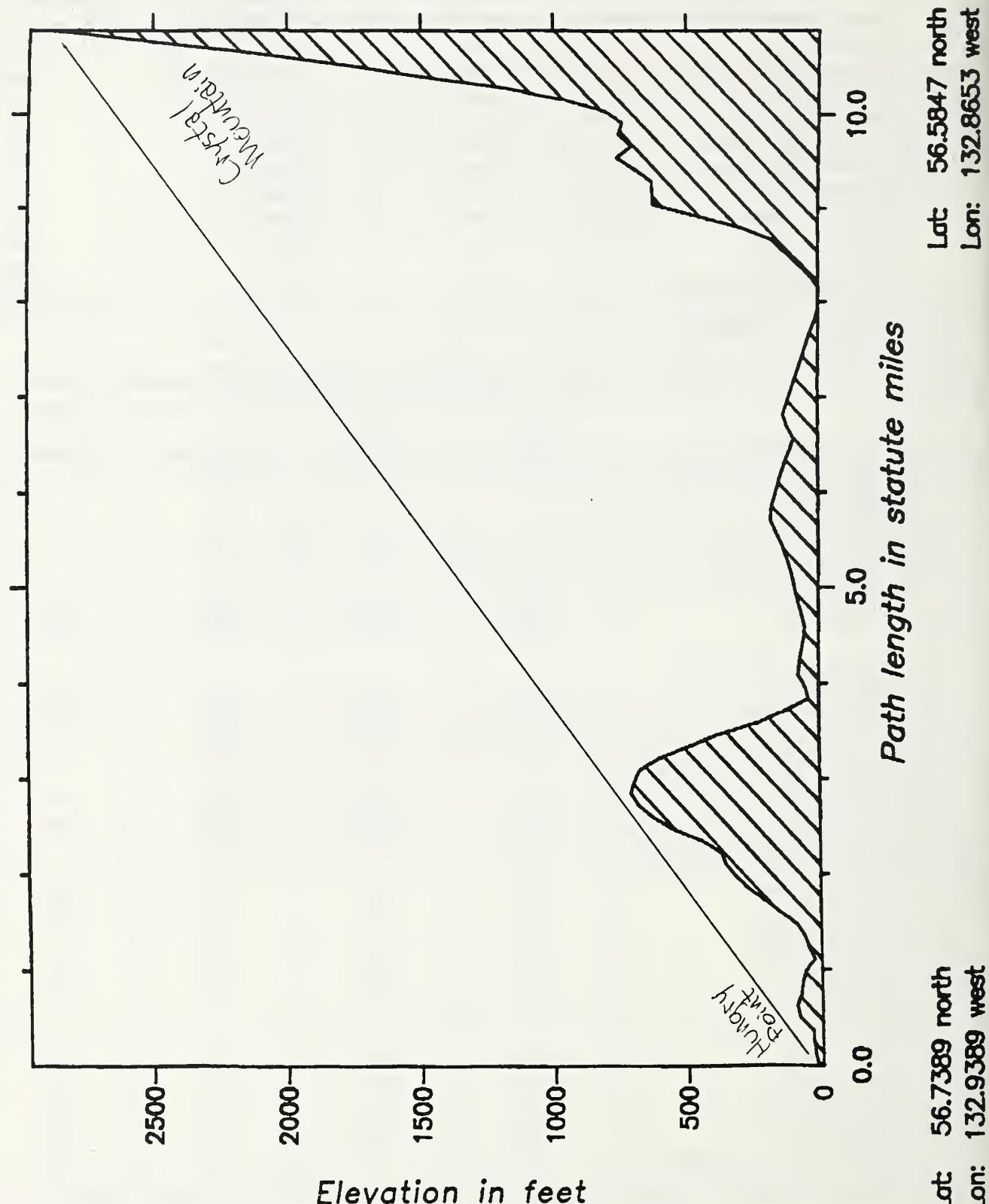
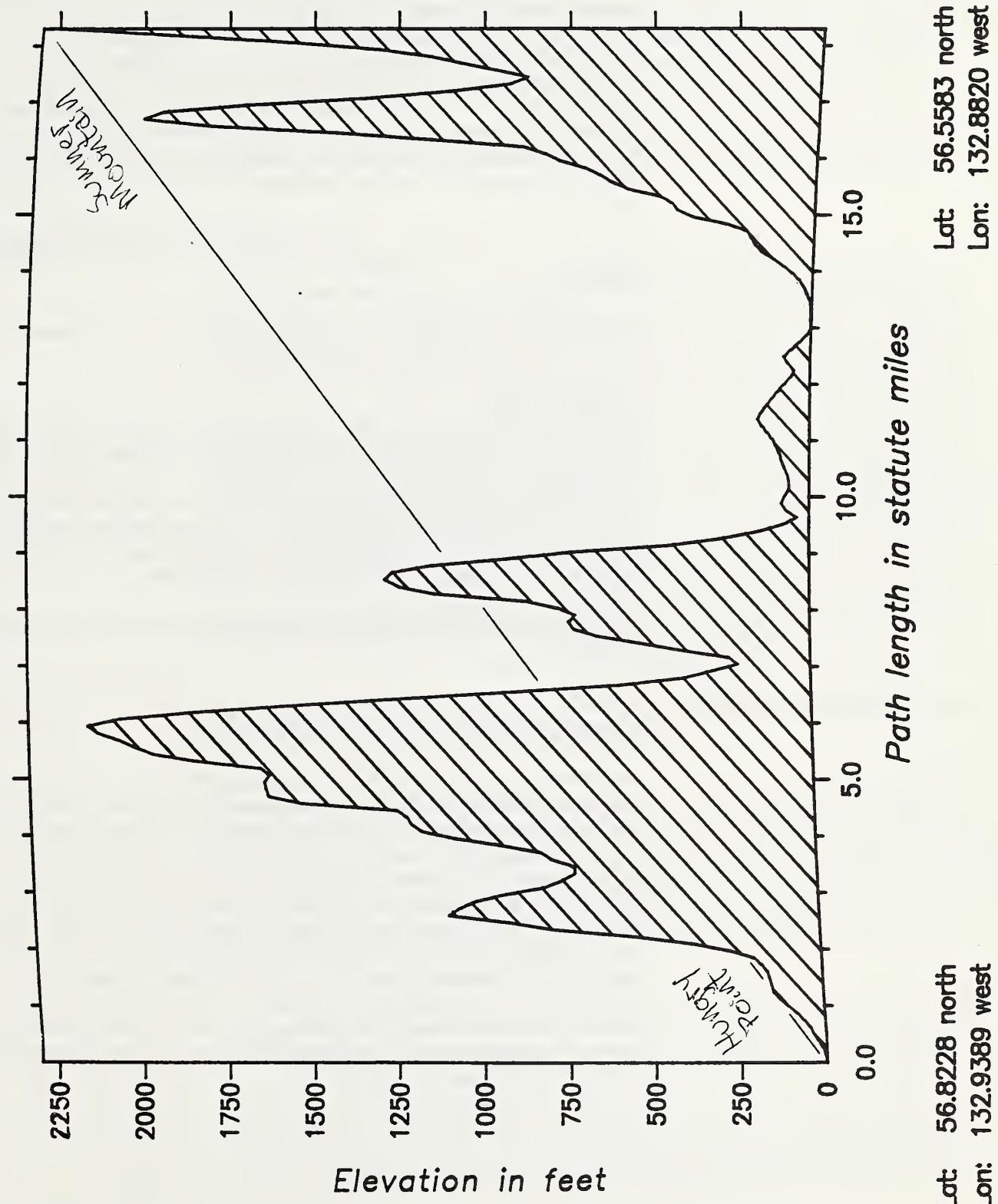


Figure 4-2. Line-of-Sight Communication Capability between Sumner Mountain and Hungry Point, Which Includes All of Downtown Petersburg.



## **4 Environmental Consequences**

### **Recreation Supply**

## **Compatibility with Recreation Use**

#### **Recreation Opportunity Spectrum**

**Alternative 1:** The roadless character of the area would remain intact because the roadless inventory for the forest did not identify communications sites as incompatible. However, the ROS setting within the recreation place would change. In the short term, modest development would change the setting attributes from the present Semi-primitive Non-motorized (SPNM), toward the developed end of the spectrum, possibly Semi-primitive Motorized (SPM), or Roaded Natural (RN), even though there would be no roads. Ultimately development will result in a shift to Roaded Modified (RM). At this point the level of development from an ROS perspective might not make much difference. In other words once this threshold is reached, additional development, such as additional buildings, might not affect the setting any further.

**\*Alternative 2:** The ROS for the Sumner Mountain area would remain Roaded Modified.\*

**\*Alternative 3:** The ROS for the Lindenberg Mountain and Zarembo site areas would remain Semi-Primitive, Non-Motorized.\*

#### **Recreation Place**

**Alternative 1:** \*Crystal Mountain would remain a recreation place, still offering the\* associated activities of hiking, viewing scenery, and skiing. Generally once the ROS setting has changed toward the urban end of the spectrum, so will user expectations, in the sense that those who choose to continue visiting Crystal Mountain will find a way to live with the changes. These changes include additional tolerance of sights and sounds of other visitors, nearby management activities, and the presence of regulations and regimentation of visitors.

**\*Alternatives 2 and 3:** These Alternatives do not involve sites inventoried as recreation places.\*

### **Recreation Quality**

#### **Access**

**\*Access** would remain the same on all four sites. \*

#### **Remoteness and Solitude, Scenery and Aesthetics**

For all four sites, perceptions of remoteness and solitude would diminish and be eliminated for some users. The scenery and esthetic impacts would be unacceptable to many as well. Opportunities for both of these values would still be present and acceptable to some, however. The hike to the ridgeline would still be in a natural setting. As one crossed the ridge to the summit, the development would become more prominent. Views from the summit will still be outstanding; however, the visitor would need to work around the communication development to attain all of them. Solitude might become more of a function of when the area is visited, as well as where one is on the ridge, such as over the shoulder of the ridge or off the beaten path on some side ridge. \*The presence of a communication facility would be another indication of human presence, in addition to those described in Chapter 3 under "Remoteness and Solitude."\*

**Challenge and Accomplishment**

**\*Alternatives 1 and 2:** Challenge and skill would also be diminished somewhat. The feeling of attaining the summit would be lessened when it was found others had done so previously, as evidenced by high technology equipment. The remoteness factor greatly influences challenge and skill, and as perceptions of remoteness are lost, so would the gratification of testing one's self-reliance. Opportunities to market the area for the adventure traveler would still be present, but might be geared toward a different market segment to steer away from the "purist" types.

**\*Alternative 3:** These qualities would change less than with Alternatives 1 and 2 because communication facilities have already been located on Lindenberg and Zarembo Summits.\*

**Recreation Demand****Number of Visits**

**Alternative 1:** Existing use of the area is likely to be maintained, or to increase, given the discussions above about access and focus on the opportunities of the area. However, the segment of visitors to this area is likely to change. To many, the changes to the setting will be intolerable. These folks will either be displaced to other areas which provide the values and amenities they seek, or substitute this activity with another. Other visitors to the area will tolerate or not be impacted by the changes. The hike to Crystal Mountain will still be an exciting experience. For many, the impacts will not outweigh the positive benefits received. These visitors' expectations may already be tempered by the knowledge of communication site development, or other values may surface, such as camaraderie or simply exercise.

Potential trails to the area will have to consider communications site development, and vice versa. Optimum locations for the trail, and the summit as a destination may not be available. Potential for vandalism is also a concern, and additional controls, such as designing the trail to avoid the communications site entirely, may need to be considered. Increased managerial presence in the form of rules and regulations may also be necessary. Attaining the alpine ridge as a destination would not be impacted, nor would the difficulty level objective.

**\*Alternatives 2 and 3:** The number of visits would not change in any notable way on the Sumner, Lindenberg, and Zarembo sites.\*

**Substitutes**

**Alternative 1:** An inventory of substitutes for the Crystal Mountain recreation opportunity was done to identify where some of the existing users might be displaced to. Since access is a key component, the inventory was done for Mitkof Island, and areas immediately to the west which can be accessed by skiff. Other primary criteria were 1) defined mountaintops, 2) presence of alpine, 3) natural settings and views, and 4) opportunities for solitude. The following sites were described, along with their advantages and disadvantages:

- Crystal Roadless Area: Crystal Mountain rises to 3,317 feet, with around 660 acres of alpine. The area is natural, has outstanding views, and provides moderate to high opportunities for solitude. It is part of a 19,293 acre roadless area.
- Other peaks to the south within the roadless area rise to 2,730', 2,690', and 2,648'. None of these peaks contains alpine. They are in natural settings with few views due to timber. They provide high opportunities for solitude. No or little use of these areas occurs. Access is difficult due to thick coniferous forest.

## 4 Environmental Consequences

- North Mitkof Area: This roadless area consists of 5,876 acres, and contains three peaks of 2,590', 2,515', and 2,400'. Around 40 acres of alpine is identified among the highest two peaks. The natural setting is intact and some views are provided. The area provides moderate opportunities for solitude. The Ravens Roost Trail provides access to this area, just to the west of these peaks.
- Manzanita: This roadless area consists of 7,850 acres, with no identified alpine. The setting is natural, with scattered views from several points. The high points along this ridge system are around 2,500'. Opportunities for solitude are considered low, due to the fragmented nature of this roadless area. Access is furthest from Petersburg, and difficult through thick coniferous forest.
- Petersburg Creek & Duncan Salt Chuck Wilderness: Accessible by skiff, the Petersburg Mountain Trail provides access to Petersburg Mountain, an elevation of 2,500 feet. Alpine settings exist along the ridge to the west, as do other points of around 2,500'. The setting is natural, and good views can be attained. The area provides moderate degrees of solitude.

\***Alternatives 2 and 3:** Substitutes were not considered for Alternatives 2 or 3 because there is no known recreation use to be displaced.\*

### District 5-year Recreation Plans

\***Alternative 1:** The trail identified in the Petersburg District 5-year Recreation Plan could still be constructed as planned in 1993. A communication facility might influence the routing or design features of the trail.\*

\***Alternatives 2 and 3:** These alternatives do not involve sites that are included in District 5-year Recreation Plans. Planning and construction of the Crystal Mountain trail would proceed as planned in 1993, without reason to consider how a communication facility might influence the routing or design features of the trail.

### Special Interest Areas

\***Alternative 1:** Special Interest Areas are to be avoided by transportation and utility systems according to the June 1990 Draft EIS of the Forest Plan Revision (Volume III, page F181). According to the Draft, "Transportation and utility sites and corridors may be located within a Special Interest Area only after a search for Transportation and utility system 'windows' has been exhausted." If Crystal Mountain were designated as a communication site, Crystal Mountain and Blind Slough could still be designated as a Special Interest Area in the Forest Plan Revision because the search for alternative "windows" has been exhausted in this communication designation analysis.\*

\***Alternatives 2 and 3:** These Alternatives do not involve sites that are proposed for Special Interest Area designation in the Forest Plan Revision.\*

### The Recreation Experience (selected quotes)

#### Alternative 1

The first indication that communications and recreation might be incompatible on Crystal Mountain came from the applicant in the cover letter to his application in 1989: "I also recommend that the proposed trail and plans for developing this mountain recreationally be terminated to insure the security of the communications facility on this mountain. If it's pristine wilderness that recreation users want, there are thousands of acres of that already set aside for them."

Some people expressed disappointment and loss at the idea of a communication facility on the summit:

"We would be extremely disappointed to find communication facilities there, and to have them detract from our photographs of the summit."

"The thought of having antennas, fuel tanks, and the noise of generators -- maybe even a fence -- spoil the only mountain top we can access without heroic effort or spending large sums of money, is extremely disheartening."

"It would be a desecration to place such things as generators, fuel tanks, antennas, and chain-link fences to keep the 'public' out."

"I don't think I'd want to climb the mountain again should any communications development take place. I want to preserve the memories I have of cooking on a fire, listening to loons on the lake, and waking up to the pristine air and scenery Crystal Mountain affords."

Others indicated that they thought the two uses were compatible as long as recreation access was maintained.

"I have hiked Crystal Mountain about six times since 1981. I believe a communications site at or near the summit is compatible with existing or future recreation uses of that mountain. As for the letter that described 'the excitement of feeling as if we are the first people to climb to new heights,' the trail described is reached by departing the Crystal Lake powerhouse and hiking adjacent to the conduit to a point where an old [bulldozer] trail heads up through the woods and joins the conduit again (which many hikers walk on) and then to the dam at Crystal Lake which hikers walk across."

"As a communications site, Crystal Mountain would certainly be a good one. However, if there should be a conflict of use that would preclude use or access by skiers or hikers, an alternative site should be considered." As long as he could still have access, he perceived the uses to be compatible.

#### **\*Alternatives 2 and 3\***

There are no quotes on recreation experience associated with Alternatives 2 and 3.\*

## **Visual Resource**

### **Landscape Character**

Regardless of the alternative chosen, the landscape character would not change.

### **Visual Sensitivity**

#### **Alternative 1**

- **View from Mitkof Highway, Wrangell Narrows, and Blind River Rapids:** As seen from Mitkof Highway, Wrangell Narrows, and the Blind River Rapids area, a communication shelter and antennas would break the horizon. However, the magnitude and presence of the Crystal Mountain environmental setting would still dominate the view.
- **View on approach to summit:** The potential for visual impacts are moderate to high in this alternative. The open, expansive terrain allows for little opportunity to absorb development as viewed in the near or foreground distance. While approaching the summit, recreationists have views of Crystal lake to the north as well as the alpine features on the ridge leading to Crystal Summit. Antennas will become apparent before the summit could be seen. Once at the summit, a communication facility will dominate the foreground view. (See Alternative 1 summit as viewed from the approach in Figure 4-3.)

## 4 Environmental Consequences

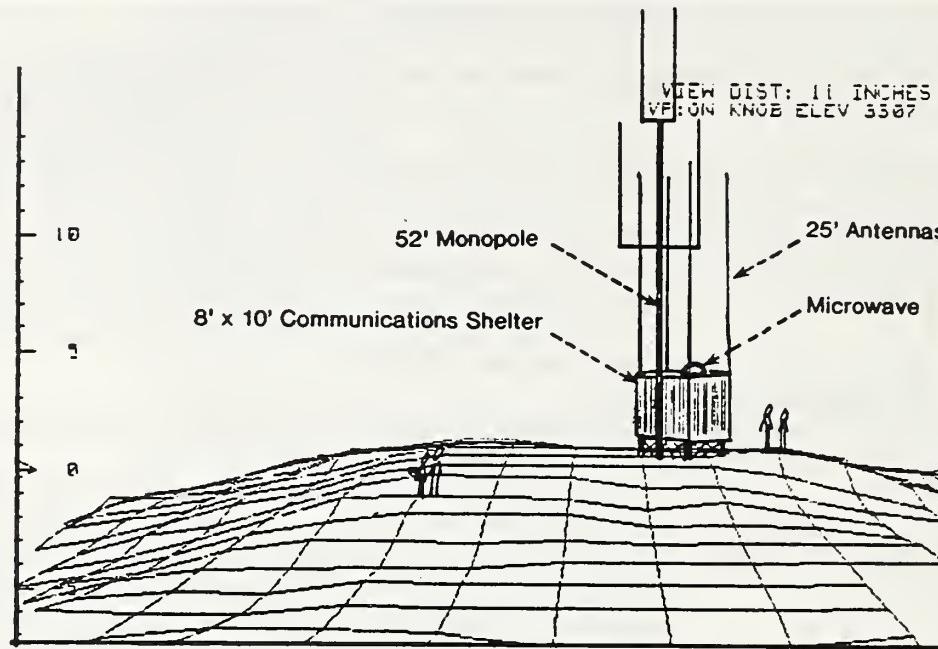


Figure 4-3. Alternative 1 as Viewed from Crystal Summit Approach.

- **View from summit.** The view from the summit will not change; however, recreationists will have to walk around the facility to observe the view.

### \*Alternative 2\*

\*Development at this site would not impact views as seen from Wrangell Narrows. Activities could be seen two miles away, from Crystal Mountain, but could be minimized through the use of non-reflective, non-glossy materials.\*

### \*Alternative 3\*

\*Due to the far viewing distance for Lindenberg Mountain, an additional facility would have minor impacts as seen from Wrangell Narrows and Mitkof Highway. Use of non-reflective materials is key to minimizing visibility. There are no significant consequences to visual sensitivity on the Zaremba site.\*

### Visual Quality Objectives

#### Alternative 1

- **Background Distance: as viewed from Wrangell Narrows, Mitkof Highway, and Blind River Rapids:** As seen from the background distance, the inventory VQO of "retention" would be met. Through coloring, siting, and orientation, the facility would not be apparent to the casual observer as seen from the Mitkof Highway, Wrangell Narrows, or Blind River Rapids.

● **Foreground Distance: Summit and Lake Basin as viewed from approach to summit:** In the foreground distance, the inventory VQO of "partial retention" would be difficult or impossible to meet. In this VQO setting, management activities must be subordinate to the characteristic landscape, which in the case of Crystal Mountain is an open, rocky alpine setting, with little vegetation and few natural features to use as elements in the design or siting of a facility. Through coloring, siting, and orientation, an attempt could be made to reduce the visual impacts as seen in the foreground. However, the bulk and magnitude of a facility would dominate the foreground view.

**\*Alternative 2\***

\*The inventory VQO of "modification," described in Chapter 3, could be met.\*

**\*Alternative 3\***

\*The inventory VQOs of "partial retention" for Lindenberg Mountain and Maximum Modification for the Zarembo Site could be met.\*

## Impact on Natural Resources

### Soils and Geology

\*For all alternatives\*, the only change in soils or geology would be the use of a number of rock bolts to anchor the communications structure and the antenna towers. Blasting would not be necessary. \*Sumner Mountain may require additional support to hold a facility on the steep, rocky summit.\*

### Vegetation

**Alternatives 1 \*and 2\***

\*Up to 200 square feet\* of alpine vegetation would be covered by a structure, fuel tanks, and antenna tower(s) over alpine vegetation. \*Construction may disturb adjacent vegetation; recovery of disturbed areas should occur within a year or two.\*

**\*Alternative 3\***

\*Up to 400 square feet of vegetation would be covered by structures, fuel tanks, and antenna tower(s) on the two sites. Construction may disturb adjacent vegetation; recovery of disturbed areas should occur within a year or two.\*

### Watershed

\*For all alternatives, no change is anticipated in runoff patterns or any other characteristics of the watershed.\*

### Wildlife

**Alternative 1**

**\*Wildlife Other Than Birds:** Wildlife other than birds would use the habitat on Crystal Mountain as before. No effects are anticipated.\*

**\*Birds:** There is extensive documentation of bird mortality due to collision with radio towers across the United States; however, the number of such fatalities is small compared to that caused by windows and other forms of glass (Avery, Springer, and Dailey, 1980). There was no evidence of bird fatalities caused by the previous radio tower on Crystal Mountain, nor is there any documented in association with existing towers on other peaks in the area.

## **4 Environmental Consequences**

\*Communication facilities generally pose the greatest threat to birds when guywires, aerial powerlines, and light sources occur on a peak along a major migration corridor. Crystal Mountain itself is not known to be used to any great extent by migrating birds. Migrating cranes, raptors, falcons, and accipiters could strike a tower. This potential is the greatest in bad weather. Cranes may be the most vulnerable; raptors would be less vulnerable because they are not likely to fly when the weather is bad.\*

\*Construction of a facility would destroy some potential nesting habitat for ptarmigans and pipits. However, only a very small percentage of the suitable habitat for these species would be affected. The impact of the facility on these and other birds would be lessened by avoiding placement over any of the ponds. Construction work could be scheduled to avoid the nesting season (March to August). Maintenance and inspection could also be kept to a minimum during these months.\*

**\*Alternative 2\***

\*The effects on wildlife are the same as those described on Crystal Mountain, except there are no ptarmigan or pipits on Sumner Mountain.\*

**\*Alternative 3\***

\*The effects on wildlife are the same as those described on Crystal Mountain, except there are no pipits or ptarmigan on Lindenbergs Mountain.\*

**\*Threatened and Endangered Species\***

\*No noticeable effects are anticipated on Peregrine falcons on any of the sites.\*

## **\*Impact on Subsistence Users\***

\*This section evaluates whether or not there is a significant possibility of a significant restriction of subsistence use as a result of each of the alternatives.\*

**\*Abundance and Distribution\***

\*There would be no change in the abundance or distribution of deer or ptarmigan on any of the sites regardless of the alternative selected.\*

**\*Access\***

\*There would be no change in the access to any of the sites regardless of the alternative selected.\*

**\*Changes in Competition\***

\*There would be no change in competition on any of the sites regardless of the alternative selected.\*

**\*ANILCA Section 810 Finding\***

\*Based on the fact that viable populations of subsistence species will remain intact and access and competition will remain unchanged, there is no significant possibility that any of the alternatives would result in a significant restriction of subsistence use on any of the sites.\*

## **\*Impact on Cultural Resources\***

\*All four sites are in the low probability zone for cultural resources, and a field inventory on Crystal Mountain revealed no sign of historic or prehistoric use. As a result, cultural resource clearance is recommended regardless of the alternative selected.\*

## Cost to Communication Users

The figures for cost to users were based on the estimated cost to develop and maintain the proposed services on Crystal and the two no-action, comparison sites, Sumner and Lindenberg/Zarembo. A cost factor was developed for each option and multiplied by \*\$10,\* \$100, \*and \$1000\* to compare the cost of the same hypothetical services provided from different sites.

### Development and Operation Costs

Development and operation costs for facilities in southeast Alaska are considerably higher than one might expect based on experience in the continental United States or other locations where road access simplifies construction and operation. Equipment and helicopters must be barged from outside the local area and helicopter fueling is expensive. Table 4-3 compares the development costs of each alternative, as summarized below. The basic costs of establishing a site are the same regardless of the coverage area, approximately

\$30,000 for structure and power  
\$40,000 for a 3-channel radio system  
\$6,000 per year for fuel and helicopter fueling  
\$2,000 per year for maintenance  
  
= \$70,000 total for start-up  
= \$8,000 total per year fuel and maintenance

The basic cost of establishing a two-site option to act as one site requires additional expenses including:

\$30,000 for second structure and power  
\$40,000 for second 3-channel radio system  
\$40,000 for radio system to communicate between sites  
\$6,000 per year for second site fuel and helicopter fueling  
\$2,000 per year for maintenance of second site  
\$2,000 per year for maintenance of between-site equipment  
  
\$110,000 total second site for start-up  
\$70,000 total first site for start-up  
= \$180,000 total two-site start-up  
  
\$10,000 total per year second site fuel and maintenance  
\$8,000 total per year first site fuel and maintenance  
= \$18,000 per year two-site fuel and maintenance

#### Alternative 1

Development of Crystal Mountain is the least expensive of the alternatives because it is a single site that is relatively flat and easy to develop. The costs of establishing and maintaining a facility on Crystal are anticipated to be \$70,000 for start-up and \$8,000 per year for fueling and maintenance.

#### Alternative 2

Sumner is also a single site but the summit is steep and may require construction of a platform to brace the structure. The platform could require \$5,000 in addition to the \$70,000 cost associated with establishing an average site, and \$8,000 per year for fueling and maintenance.

## **4 Environmental Consequences**

### **Alternative 3**

This combination site would require establishing two new sites even though a multi-user facility is already operating on Lindenberg Mountain. Full costs would be anticipated on Lindenberg, whether the applicant were to rent space from the Lindenberg site manager or were to build another facility. In addition to the costs of establishing two sites, expenses include features that allow the two sites to talk to each other, such as additional radios, twice as many frequencies, and additional antennas. Start-up costs are estimated at \$170,000 plus \$18,000 per year for maintenance.

**Table 4-3. Comparison of Cost to Applicant**

	Alternative 1 Crystal	Alternative 2 Sumner	Alternative 3 Lindenberg/ Zarembo
Site Development	\$30,000	\$35,000	\$60,000
Equipment	\$40,000	\$40,000	\$80,000
Between-Site Communication	\$0	\$0	\$40,000
Total Site Development	\$70,000	\$75,000	\$180,000
Average over 10 Years	\$7,000/yr	\$7,500/yr	\$18,000/yr
Fueling and Maintenance	\$8,000/yr	\$8,000/yr	\$18,000/yr
Annual Cost	\$15,000	\$15,500	\$36,000

### **User Costs**

The cost to users is a hypothetical comparison of each alternative based on a number of assumptions. The cost of services was calculated based on the annual costs to develop and maintain each site, and on the potential service population that could be reached by each alternative. The Forest Service made the following assumptions in developing this analysis:

1. The developer will pass on increased development costs to customers equally in each alternative.
2. Higher costs would cause some users to do without the service and the cost for remaining users would be even higher to make up for fewer customers.
3. Differences in costs to the developer would be distributed among different numbers of users depending on the alternative.

4. The assumption in (2) won't matter if the annual operating cost of each alternative is divided by its potential service population. For example, one location might have greater cost to develop but could also reach a larger pool of potential customers to share the higher cost. The "High Power Factor" is the annual developer cost divided by the high power service population and the "Low Power Factor" is the annual developer cost divided by the low power service population. The User Cost Factor is the average of the High Power and Low Power Factors (see Table 4-4).
5. Based on Table 4-4, The User Cost Factor for Crystal is 2.6; Sumner is 3.5, and Lindenberg/Zarembo is 8.1.

**Table 4-4. Calculation of User Cost Factor**

	Alternative 1 Crystal	Alternative 2 Sumner	Alternative 3 Lindenberg/ Zarembo
Annual Cost to Developer	\$15,000	\$15,500	\$36,000
Low Power Population	*5000*	4000	4000
High Power Population	7000	5000	5000
Low Power Factor (AC/LP)	*3.0*	3.9	9.0
High Power Factor (AC/HP)	2.1	3.1	7.2
User Cost Factor (LPF+HPF)/2	*2.6*	3.5	8.1

The applicant anticipates offering a range of services with different costs associated with each service. Although he can't yet predict the exact cost of each service, the costs associated with each alternative are assumed to vary according to the User Cost Factor. Therefore, if the cost of a service under Alternative 1 (using Crystal Mountain) is 100 percent, the same service would cost \*135\* percent with Alternative 2, and \*312\* percent with Alternative 3. An example will illustrate these differences:

#### **Alternative 1**

The applicant could provide a hypothetical set of services from Crystal Mountain for \*\$26, \$260, and \$2600.\*

#### **Alternative 2**

Assuming the applicant could provide the same set of hypothetical services from Sumner that he could from Crystal, he could provide them for \*\$35, \* \$350, \*and \$3500.\*

#### **Alternative 3**

Assuming the applicant could provide the same set of hypothetical services from Lindenberg/Zarembo that he could from Crystal, he could provide them for \*\$81, \* \$810, \*and \$8100.\*

## Reasonably Foreseeable Development

One way of judging the extent of \*reasonably foreseeable\* development on a site once it has been designated is to consider how facilities have grown on previously designated, desirable sites. Two key factors in future development are road access and availability of electricity. Sites with road access and powerlines are often developed to a greater degree than sites without these features. There is no road access to any of the sites described in detail.

### Alternative 1

The facility on Crystal Mountain could expand to include additional propane fuel tanks, converting to diesel fueled generators, or installing a buried powerline to the Crystal Lake power facility (see Figure 4-5). The availability of electricity from a powerline would make it more likely that a site could include more users, larger facilities, and more antennas on more towers.

Construction of a trail is likely on Crystal Mountain. Crystal Mountain has been recommended for designation as part of a Special Interest Area in the Forest Plan Revision, along with the Blind Slough and Blind River Rapids complex.

### \*Alternatives 2 and 3\*

\*The cumulative effects of Alternatives 2 and 3 would be the same on Sumner or Lindenberg/Zaremba as described for Crystal Mountain, except that there are no power sources nearby for possible buried powerline development.\*

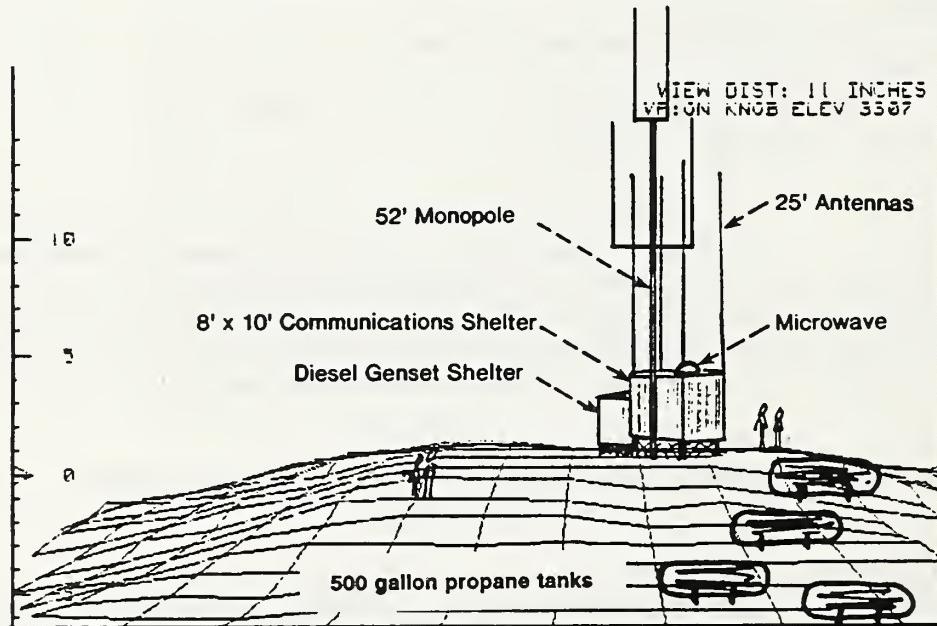


Figure 4-4. Appearance of Reasonably Foreseeable Development for Alternatives 1, 2, and 3.

## Cumulative Effects

### Meeting Communication Needs

### Compatibility with Recreation Use

### Visual Resource

\*The cumulative effects of each alternative on meeting communication needs are the same as described for indirect effects. Alternatives 1 and 3 would meet the communication needs described in Chapter 1; Alternative 2 would meet some of the needs but could not provide for the needs of people in Petersburg wishing to use low power levels\*

\*The development of satellite communication capabilities in the future will probably not be able to replace the need for ground stations.\*

#### Alternative 1

The recreation experience on the summit could change if a diesel generator were installed. Diesel generators are noisier than propane and have a noticeable diesel smell.

Use of Crystal Mountain is likely to increase over time, with or without a trail. The recreation planning effort and this study have brought increased attention to the opportunities Crystal Mountain provides. The Snake Ridge Road, which facilitates access to the area, is still being discovered by visitors. Thus a slow but steady increase in use can be expected over the next few years, even without development of a trail. Marketing of this area to non-residents could also increase this use.

Any potential trail up the mountain would have to deal with logistical concerns such as muskeg soils, steady climbing grades, the open and somewhat fragile nature of the alpine area, and reconstruction of the access road. Current indications for trail objectives from District recreation specialists identify a trail difficulty level of more- to most-difficult, with the open ridgeline as an immediate destination. The summit would also be a destination; however, the trail may change standards to attain this point, depending on site-specific conditions and other objectives. Options also include loop trail potential, either a major loop swinging back to the hatchery/Blind Slough recreation site, or simply a loop along or near the end of the ridgeline, such as at the summit, to bring a sense of ending to the trail.

Over time, other factors will be affecting the Crystal Mountain setting. State land selections to the north and west have the potential for activities and development which may impact what one sees, hears, and feels. Management of National Forest to the south and west have the same potential impacts. Visitor use of the area, with or without a trail, will likely increase the number of social encounters, and possibly the need for management presence. Aircraft overflights and other external factors could increase. These impacts would likely be gradual, and users of the area may adapt over the time they occur.

#### \*Alternatives 2 and 3\*

\*The cumulative effects of Alternatives 2 and 3 would not change the recreation experience on these sites beyond those for Crystal Mountain, except that there is no proposed trail development.\*

#### Alternative 1

The view from the Mitkof Highway, Wrangell Narrows, and the Blind Slough area would remain the same. The facility would not be obvious from such distance. The view on approach to the summit would include a more bulky appearance from diesel facilities. A buried powerline could reduce the visual impact in the long run by eliminating the need for a series of propane tanks.

## **4 Environmental Consequences**

### **Impact on Natural Resources**

#### **\*Alternatives 2 and 3\***

\*The visual resource would change as described for Alternative 1, except there is little likelihood that a buried powerline would replace fuel tanks.\*

### **Impact on Natural Resources**

#### **Alternative 1**

A powerline would disturb the ground from Crystal Lake to the Summit. Diesel power would require special containment structures to prevent a diesel fuel spill from seeping into the ground or running off over the surface. A diesel generator would displace some vegetation, although probably not as much as the right-of-way for a powerline. Some animals may be displaced from the immediate vicinity of a noisier diesel generator. \*Hunting pressure on ptarmigans will probably increase on Crystal Mountain as a result of trail development regardless of the alternative selected.\*

#### **\*Alternatives 2 and 3\***

\*The same cumulative effects are anticipated on Sumner and Lindenberg/Zaremba as described for Crystal Mountain.\*

### **\*Subsistence Use\***

#### **\*Alternative 1\***

\*The isolated population of ptarmigan on Crystal Mountain is vulnerable to over-hunting if access is improved by the proposed trail. Limiting of hunting season or bag limits may be appropriate in the environmental analysis for the trail.\*

#### **\*Alternatives 2 and 3\***

\*Because access and competition would remain unchanged in the foreseeable future, no cumulative effects are anticipated on subsistence use associated with Alternatives 2 and 3.\*

### **\*Cultural Resources\***

\*Because of the absence of cultural resources on all four sites, no cumulative effects are anticipated as a result of any of the alternatives.\*

### **Cost To Communication Users**

#### **Alternative 1**

Increased development would mean increased services available throughout the area covered by Crystal Mountain. The cost of the services would probably remain competitive.

#### **\*Alternative 2\***

\*Increased development would also require increased cost to support a larger facility on the steep, rock summit. The costs would probably continue to be slightly higher than for Alternative 1.\*

#### **\*Alternative 3\***

\*Increased development would require increased cost on both sites as well as on between-site equipment. The cost would probably continue to be significantly higher than for Alternatives 1 or 2.\*

## \*Incomplete and Unavailable Information\*

\*The National Environmental Policy Act (NEPA) requires that agencies shall make clear when information is lacking in an environmental analysis (40 CFR 1502.22). NEPA also requires that environmental analyses should be no lengthier than necessary to describe alternatives and consequences. As a result, the team preparing a document must decide which methodologies are appropriate and how much detail should be included. Commentors have asked the Forest Service to provide two kinds of information in the Final EIS that have not been included -- the dollar value of the recreation experience on Crystal Mountain and on-the-ground testing of radio communication coverage.\*

### \*Dollar Value of Recreation Experience\*

\*After reviewing a number of methods for identifying a total dollar value for the recreation experience on Crystal Mountain, the team can find no meaningful method.\*

- \*The *Travel Cost* method suggests that the more money people spend to get to an area, the more important it is to them. This method would rate the recreation value of Crystal low because one needn't spend much money to get there from Petersburg. But the closeness to Petersburg is part of what makes Crystal Mountain valuable to recreationists.\*

- \*The *Willingness To Pay* method involves asking people how much they would be willing to pay to use an area, for communication or for recreation, and how often they would use each at various costs. The method is not considered reliable, however, because the answers are highly speculative. Even with the best of intentions, people do not always do what they think or say they would do, especially when asked a series of hypothetical questions.\*

- \*The *Alternate Use* method involves calculating the anticipated value of an alternate use, such as communications, and then establishing high enough recreation fees to exceed the economic value of the alternate use. But calculating hard numbers for anticipated communication use is subject to the same speculative nature as the *Willingness To Pay* method, and the Forest Service is not proposing to charge a fee to recreationists for use of Crystal Mountain.\*

\*This EIS describes the recreation value to users of Crystal Mountain primarily in *qualitative* terms, including quotes, because the *quantitative* methods don't seem appropriate or helpful. Peoples' values vary. One recreationist may want to keep the summit natural at all costs while another might be easily willing to live with signs of human influence. People can argue forever about cost methodologies and relative value factors, but the heart of the matter is differences in values. Arguing about equations would only prolong the decision-making process without clarifying issues or resolving differences. The value difference has already been laid out clearly in this EIS.\*

## **4 Environmental Consequences**

### **\*On-The-Ground Communication Coverage Testing\***

\*On-the-ground testing is extremely time consuming and expensive, and may yield less reliable results than the computer generated maps from the National Telecommunications and Information Administration (NTIA). It's true that other local firms may sometimes be able to reach specific points the NTIA maps say they cannot, with an intelligible transmission. However the maps describe entire areas that can be reached consistently, with commercially reliable signal strength.\*

\*The only way to verify or disprove the NTIA maps is to send crews of technicians to every point on the maps at different times of the year, under the full variety of weather conditions, to measure the signal strength from each peak (see Appendix D for NTIA letter on costs and effort associated with on-the-ground testing). Such an effort could entail years of testing. We think this would be an unwise use of personnel and funds because the maps already provide the information. NTIA is the national specialist in such information, providing information that resolves communication disputes involving the Federal Aviation Administration, the Federal Communications Commission, and the United States military. We think NTIA is the best the Forest Service can do, even compared to the results of spending 1000 times the cost of the computer maps for on-the-ground testing.\*

\*We also think on-the-ground testing would be subject to the same disagreements directed at the maps today. Critics could fault the research design and the consistency of equipment calibration over the length of the study. On-the-ground testing is not foolproof even when practical for smaller applications.\*

### **\*Relationship Between Short-Term Use and Long-Term Productivity\***

\*Communication services are a short-term use as well as a long-term value. A communication site designation would have no impact on the long-term productivity of any of the sites described in detail in this EIS.\*

## **Adverse Environmental Effects Which Cannot Be Avoided**

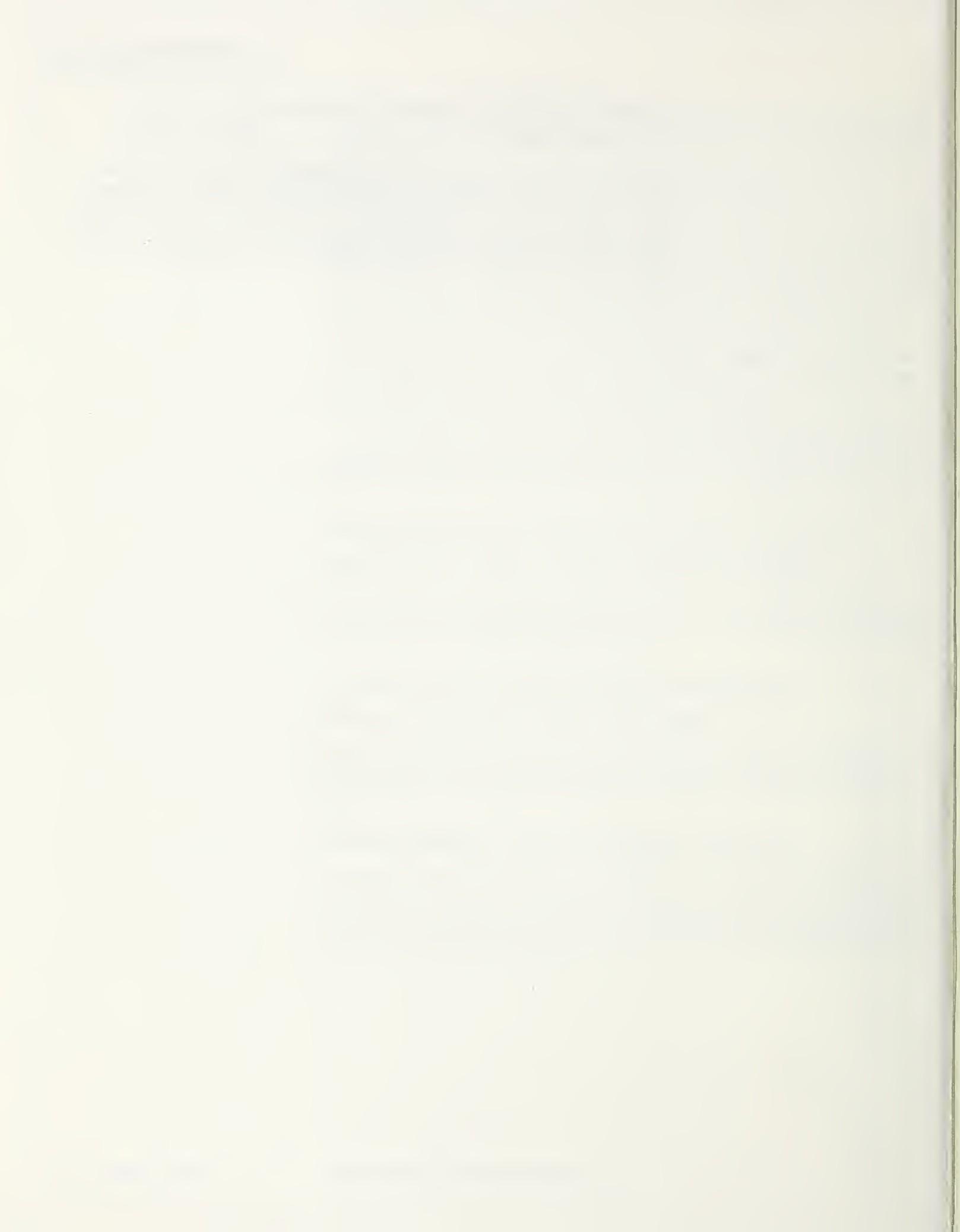
There is one adverse effect which cannot be avoided if Alternative 1 is selected. The nature of the recreation experience will change for users when approaching and spending time on the summit because they will see the facility.

## **Irreversible Loss of Resources**

An irreversible loss is a permanent or long-term use of a resource that is not replaceable within a lifetime, including the destruction of a cultural site or consumptive use of minerals. If Crystal or any other site were developed and then became obsolete, was no longer used, or a permit were denied in the future, the Forest Service could require that the facility be removed.

## Irretrievable Commitment of Resources

An irretrievable commitment is a decision that makes other choices unavailable during the life of the commitment. The decision cannot be retrieved for the time that has already passed, but could be changed in the future. If Crystal Mountain or any other site were developed but eventually became obsolete due to advances in communication technology, the all-natural quality of the environment on the summit would be lost only as long as the facility was located on the summit.



# **Chapter 5**

## **List of Preparers**



# List of Preparers

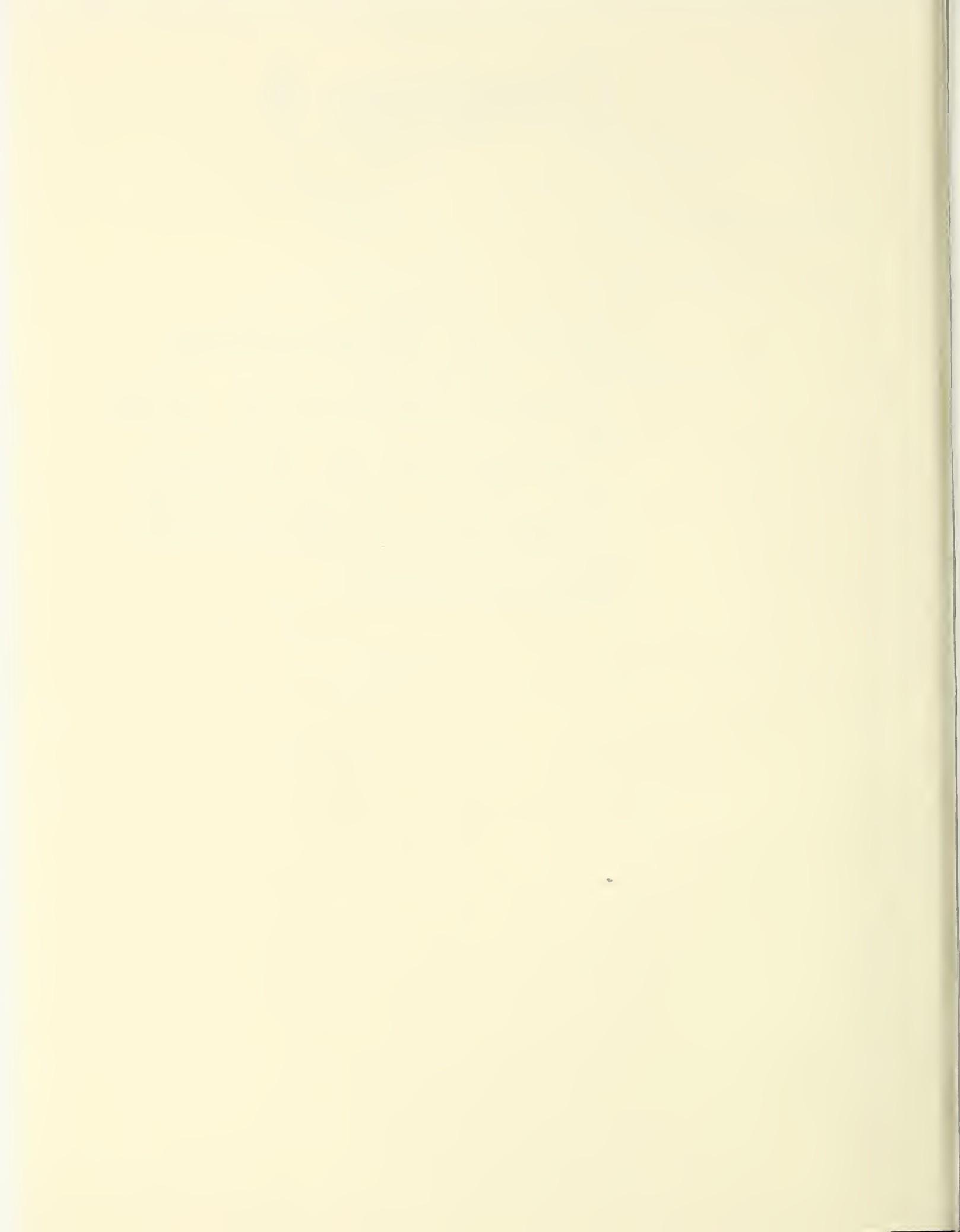
Members of the team responsible for conducting the Crystal Mountain Communication Site Designation EIS are listed alphabetically below:

<b>Kenneth Burton</b> <i>Wildlife Technician</i>	B.A. Biology M.A. Ecology 4 years experience
<b>Deirdre Buschmann</b> <i>Landscape Architect</i>	B. Landscape Architecture 7 years experience
<b>Mary Clemens</b> <i>Forester (Rec/Lands)</i>	B.S. Forest Management 10 years experience
<b>Bob Daniels</b> <i>Wildlife Biologist</i>	B.S. Wildlife Biology 11 years experience
<b>Larry Dunham</b> <i>Civil Engineer</i>	B.S. Civil Engineering 11 years experience
<b>Ron Freeman</b> <i>Recreation Specialist</i>	B.S. Recreation Management 15 years experience
<b>Denny Hildreth</b> <i>Forestry Technician</i>	B.S. Natural Resources (Recreation) 7 years experience
<b>Mark Hummel</b> <i>NEPA Coordinator</i>	B.S. Natural Resources M.S. Resource Policy & Mgmt 4 years experience
<b>Gall Johnelack</b> <i>Hydrologist</i>	B.S. Wildland Watershed Management 6 years experience
<b>Merrily Jones</b> <i>Public Affairs Specialist</i>	B.A. English 14 years experience
<b>Everett Kisslinger</b> <i>Soil Scientist</i>	B.S. Agriculture 24 years experience
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<b>Willard Lowe</b> <i>Supervisory Forester</i>	B.S. Forest Management 30 years experience
<b>Mark McCallum</b> <i>Archaeologist</i>	B.A. Anthropology 12 years experience

<b>Bill Pawuk</b> <i>Plant Ecologist</i>	B.S. Forestry M.S. Plant Pathology Ph D. Plant Pathology 20 years experience
<b>David Rak</b> <i>Forester (Rec/Lands)</i>	B.S. Resource Management (Forestry) 13 years experience
<b>Kathryn Schnelder</b> <i>Supervisory Forester (Resources)</i>	B.S. Forest Management 13 years experience
<b>Tom Somrak</b> <i>Forester (Rec/Lands)</i>	B.S. Forestry 10 years experience

# **Chapter 6**

**List of Agencies,  
Organizations, and  
Persons to Whom  
Copies of this EIS  
were Sent**



# List of Agencies, Organizations, and Persons to Whom Copies of This EIS Were Sent

The following organizations and individuals are on the mailing list to receive the Draft EIS (the number of copies is in parentheses).

## Federal Agencies

Federal Agency Liaison Division, Washington, D.C. (5)  
U.S. Environmental Protection Agency, Seattle (5)  
U.S. Dept of Commerce, NOAA, Nat. Marine Fisheries Service, Juneau (1)  
U.S. Department of Interior (DOI), Washington, D.C. (12)

U.S. DOI, Fish and Wildlife Service, Juneau (1)  
U.S. DOI, Fish and Wildlife Service, Anchorage (1)

U.S. Forest Service, Alaska Region Office, Juneau (30)  
U.S. Forest Service, Washington, D.C. (5)  
U.S. Forest Service, Petersburg Ranger District (20)  
U.S. Forest Service, Stikine Area Supervisor's Office (30)  
U.S. Forest Service, Wrangell Ranger District (5)  
U.S. Forest Service, Chatham Area Supervisor's Office (1)  
U.S. Forest Service, Ketchikan Area Supervisor's Office (1)

## State Agencies

Alaska Department of Fish and Game, Petersburg (1)  
Alaska Division of Governmental Coordination, Juneau (10)

## Municipal Departments

Petersburg, City of (1)  
Petersburg Public Library (1)  
Kupreanof, City of (1)  
Wrangell Municipal Light & Power (1)  
Wrangell Harbor Department (1)  
Wrangell Public Library (1)

## Businesses (1 each)

Alascom, Inc.  
Communications Unlimited  
Crystal Mountain Communications & Mortronics Electronics  
Engineered Systems Alaska  
ITT Rayonier  
Leslie Cutting Company  
Mitkof Lumber Company  
Pacific Wing Air Charters  
P-Mac  
Pond Reef MediFlight  
Rediscovery Lodge  
Rocky Pass Towing  
Soley Corporation  
Southeast Communications  
TemSCO/Pond Reef MediFlight

## **6 List of Agencies Organizations and Persons**

### **Organizations (1 each)**

Alaska Center for the Environment (1)  
Alaska Geographic Society (1)  
Colorado State University (1)  
Crystal Mountain Club  
Narrows Conservation Coalition  
Southeast Alaska Conservation Council  
Southern Southeast Alaska Regional Aquaculture Association

### **Individuals (1 each)**

Dixie M. Baade  
Sandra Baker  
M.D. Bethel  
Paul Bowen  
Tim Chittenden

Don & Karen Cornelius  
Susan & Jeff Erickson  
Honorable Peter Goll  
Harold Hewitt  
Byron Painter

Bev & Michael Reitz  
Paula Rak  
Douglas Riemer  
Beverly Richardson  
Honorable John Sund

Ken Thynes  
Ron Ward

# **Chapter 7**

## **Glossary**



# Glossary

## ***Communications Site***

An area of a National Forest designated and approved by the Regional Forester for communications uses. A site may be limited to a single communications facility, but most often encompasses more than one. Each site is identified by name; usually a local prominent landmark such as Bald Communications Site.

## ***Communications Facility***

A building, tower, and/or other physical improvement that is built, installed, or established to house and support authorized communications use.

## ***Communications Use***

A specified activity within a communications facility.

## ***Communications Site Manager***

An entity that is authorized to manage a communications site. Responsible for activities such as permitting and managing tenants.

## ***Control Link***

The radio link between two points, say an operator's headquarters and a communication site, capable of remotely monitoring, switching, and otherwise controlling radio equipment.

## ***Distance Zones***

Landscape areas denoted by specific distances from the observer:

**Foreground:** The detailed landscape found within 0 to 1/4-1/2 mile from the observer.

**Middleground:** The area located from 1/4-1/2 to 3-5 miles from the viewer.

**Background:** Area located from 3-5 miles to infinity from the observer.

## ***FAA***

Federal Aviation Administration

## ***FCC***

Federal Communications Commission

## 7 Glossary

### **Frequency**

The number of cycles or events per unit of time. For radio communications frequency is measured in units per second, or hertz.

**Very High Frequency (VHF):** A band of radio frequencies falling between 30 and 300 megacycles per second. Commonly used with low power, handheld radios, and with more powerful radios installed in commercial boats, trucks, homes, and offices. Carries 1 channel per frequency. Line-of-sight contact between two sites is not always required because VHF waves bend slightly.

**Ultrahigh Frequency (UHF):** A band of radio frequencies from 300 to 3000 megacycles per second. Often used to establish control link between operator's headquarters and remote communication site. Carries 1 channel per frequency. UHF waves do not bend as much as VHF. Line-of-sight contact required to establish control link between two sites.

**Microwave Frequency:** A band of radio frequencies from 3000 to 8000 megacycles per second. Capable of carrying many channels per frequency. Waves do not bend -- line-of-site contact required between two sites.

### ***Irrecoverable Commitment***

The use of a resource that is lost because of a choice that is made. It represents opportunities foregone for the period of time that another resource cannot be used.

### ***Irreversible Commitment***

Commitment of resources that are renewable only over a long period of time, such as soil productivity, or to nonrenewable resources, such as cultural resources or minerals.

### ***Line-of-Sight***

Refers to the type of radio contact required between two sites in some radio applications such as microwave. The two points must "see" each other directly because the radio waves cannot bend around obstacles.

**Microwave Frequency:** A band of radio frequencies from 3000 to 8000 megacycles per second. Capable of carrying 6 to 10 channels per frequency. Waves do not bend -- line-of-site contact required between two sites.

**Microwave, Common Carrier Relay:** This use typically includes long line carriers which relay intrastate and interstate telephone, television, information, and data transmissions using point-to-point microwave networks or systems. These uses are regulated by state public utility commissions and must provide service to any consumer with the ability to pay according to published rate schedules.

**Microwave, Industrial:** This use includes microwave communications equipment not regulated by the state public utility commissions. Users in this group may include pipeline and power companies, railroads, and land resource management agencies or firms.

***Mobile Radio, Commercial Communications***

This includes communication equipment of a business which primarily provides communication service to others. This use may be on either a for-profit or not-for-profit basis, and may or may not be regulated by a state public utility commission. The uses require an FCC license. Examples of mobile radio systems in this category are common carrier systems, community repeaters,

***NEPA***

National Environmental Policy Act of 1969.

***NTIA***

National Telecommunications and Information Administration, Boulder, Colorado.

***Recreation Opportunity***

A system for planning and managing recreation resources that categorizes recreation opportunities into seven classes.

**Primitive:** A natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls.

**Semi-Primitive Motorized:** A natural or natural-appearing environment of moderate to large size. Interaction between users is low but there is often evidence of other users. The area is managed to minimize onsite controls and restrictions. Local roads used for other resource management activities may be present.

**Semi-Primitive Non-Motorized:** A natural or natural-appearing environment of moderate to large size. Concentration of users is low but there is often evidence of other users. The area is managed to minimize onsite controls and restrictions. Use of local roads for recreational purposes is not allowed.

**Roaded Natural:** A natural-appearing environment with moderate evidence of the sights and sounds of humans. Such evidence usually harmonizes with the natural environment. Interaction between users may be moderate to high with evidence of other users prevalent. Motorized use is allowed.

**Roaded Modified:** A natural environment that has been substantially modified particularly by vegetative manipulation. There is strong evidence of roads and/or highways. Frequency of contact is low to moderate.

**Rural:** A natural environment that has been substantially modified by development of structures, vegetative manipulation. Structures are readily apparent and may range from scattered to small dominant clusters. Sights and sounds of humans are readily evident and the interaction between users is often moderate to high.

### **Sensitivity Levels**

A measure of viewer interest in the scenic qualities of the landscape along a particular travel route. Sensitivity levels are determined based on the importance of the travel route (use levels), and on the type of use the route receives (recreation vs commercial). Three sensitivity levels are used to identify varying levels of use and user concern for the visual environment:

**Level 1:** Highest sensitivity. Identifies areas seen from high-use travel routes and use areas where a majority of Forest visitors have a major concern for scenic quality.

**Level 2:** Average sensitivity. Identifies areas seen from moderate-use travel routes and use areas where a moderate number of Forest visitors have a major concern for scenic qualities.

**Level 3:** Lowest sensitivity. Identifies areas seen from low-use travel routes and use areas where few Forest visitors have a major concern for scenic qualities. Also identifies areas not generally seen from any travel route or use area.

### **\*Special Interest Area\***

\*A Special Interest Area (SIA) is one of the Land Use Designations in the Draft of the Forest Plan Revision. The emphasis is to provide for the inventory, maintenance, interpretation, and protection of existing characteristics and attributes of areas within the National Forest. The proposed Crystal Mountain/Blind Slough SIA is proposed with emphasis on scenic and zoologic features.\*

### **\*Subsistence\***

\*Subsistence hunting, fishing, trapping, and gathering activities represent a major focus of life for many southeast Alaskan residents. Some individuals participate in subsistence activities to supplement personal income and provide needed food. Others pursue subsistence activities to perpetuate cultural customs and traditions. Still others participate in subsistence activities for reasons unconnected with income or tradition. For these individuals, subsistence is a lifestyle reflecting deeply held attitudes, values, and beliefs. The Alaska National Interest Lands Conservation Act (ANILCA) provides for "the continuation of the opportunity for subsistence uses by rural residents of Alaska, including both natives and non-Natives, on public lands."\*

### **VCU - Value Comparison Unit**

A distinct geographic area that generally encompasses a drainage basin containing one or more large stream systems. Boundaries usually follow easily recognizable watershed divides. These units were established to provide a common set of areas for which resource inventories could be conducted and resource value interpretations made.

**Variety Classes:**

A measure of visual diversity within a landscape character type (refer to Visual Character Types, Series No. R10-63, for name, description and location of the Alaska Region's eight landscape character types). There are three variety classes:

**Class A (Distinctive):** Areas where features of the landscape are of unusual or outstanding visual quality. They are usually not common in the character type.

**Class B (Common):** Areas where landscape features display variety to a degree which is common throughout the character type. These landscapes are the benchmark from which distinctive and minimal can be judged.

**Class C (Minimal):** Areas where landscape features display less variety than found normally within the character type.

**Visual Quality Objectives (VQO's)**

Measurable standards reflecting five different degrees of landscape alteration based upon a landscape's diversity of natural features and the public's concern for scenic quality. "Inventory" VQO's have not yet undergone trade-off analysis relative to other Forest resources. "Adopted" VQO's reflect analysis involving other resources and become management direction in a selected and approved land management alternative. The five categories of Visual Quality Objectives are:

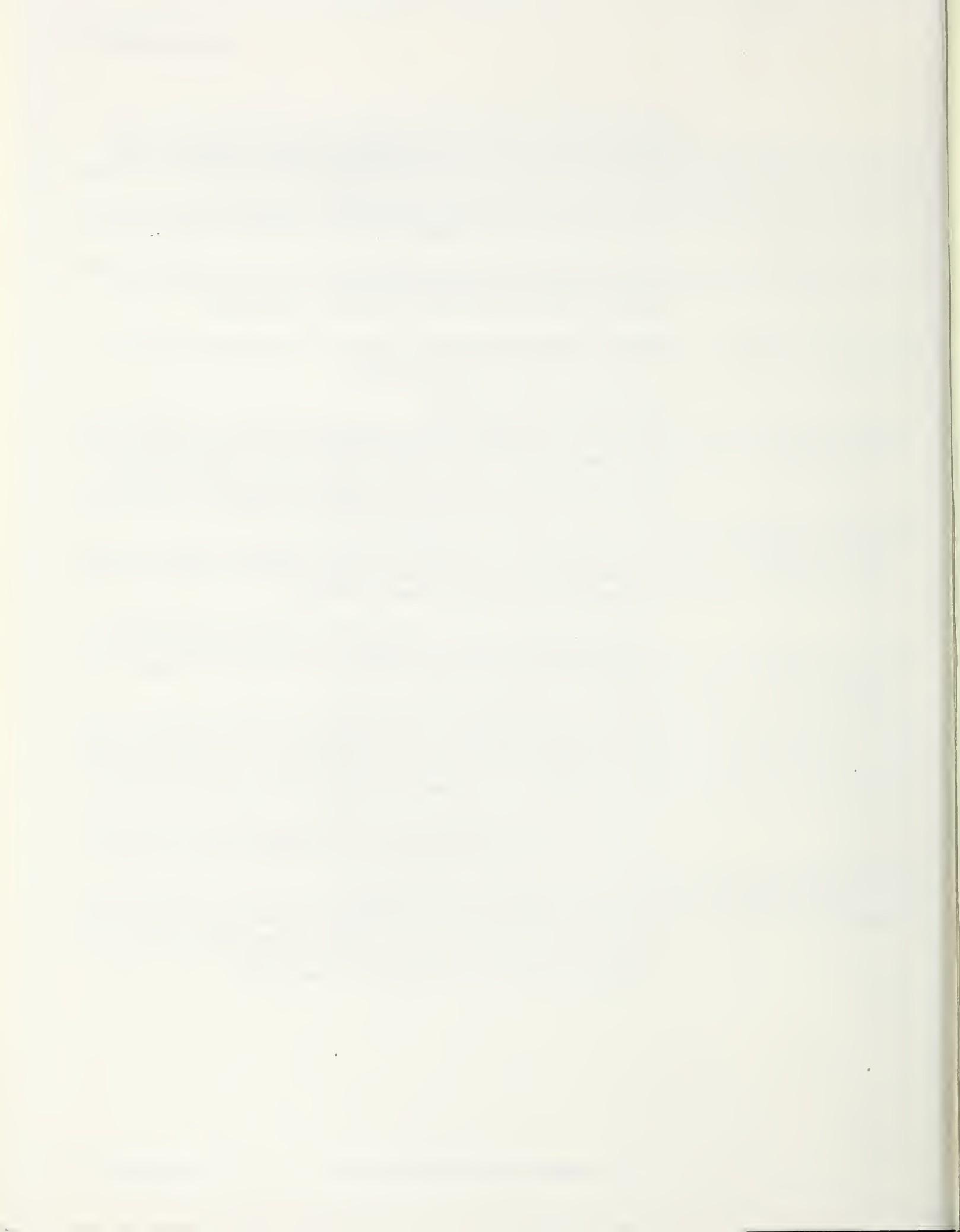
**Preservation:** Allows only ecological changes. Management activities, except for very low visual impact recreation facilities, are prohibited. This objective applies to specifically classified areas including wilderness.

**Retention:** Provides for management activities which are not visually evident. Activities may only repeat form, line, color, and texture frequently found in the characteristic landscape. Changes in size, amount, pattern, etc., should not be evident.

**Partial Retention:** Management activities may be evident to the viewer, but must remain visually subordinate to the surrounding landscape. Activities may repeat form, line, color, or texture common to the characteristic landscape but changes in their qualities of size, amount, pattern, etc., remain visually subordinate to it.

**Modification:** Management activities may visually dominate the original surrounding landscape but must borrow from naturally established form, line, color and texture. Activities should be visually compatible with the natural surroundings.

**Maximum Modification:** Land management activities may dominate the characteristic landscape. When viewed as foreground or middleground, activities may not appear to completely borrow from naturally established patterns. However, when viewed as background, the visual characteristics must be those of natural occurrences within the surrounding area or character type.



# **Chapter 8**

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# **Appendix A**

## **Proposal for Communications Permit**



# APPENDIX A

## DEVELOPMENT PROPOSED ON CRYSTAL MOUNTAIN BY CRYSTAL MOUNTAIN COMMUNICATIONS

The original proposal was filed by Mortronics in November 1989. Early in 1990 the applicant incorporated as a new company, Crystal Mountain Communications. After Crystal Mountain was designated in 1990, the Forest Service met with Crystal Mountain Communications and members of the public to negotiate mitigation measures to be included in the permit decision. Then the designation was remanded. This EIS addresses a new proposal based on the mitigation measures negotiated in 1990, with the following changes:

- Addition of microwave service
- Locating the facility on the central summit rather than the east summit

### Type of Service Proposed

The applicant has proposed to construct and operate a multi-user facility capable of providing safety communications, commercial communications, and convenience communications for fishing fleets, timber companies, floatplane and marine charter services, emergency response coordination, power utilities, the Forest Service, and citizens in southeast Alaska living in remote locations. The term "multi-user" means the applicant would, in addition to housing his own equipment, lease space to other users also wishing to provide services for personal or public use.

The proposed services would include VHF and UHF radio, UHF control links to Petersburg and Wrangell, microwave, radio telephone, and data transfer. Coverage would include areas that cannot be reached from currently designated communication sites. (See Chapter 2, "Other Sites," and also see Stikine Area-wide Communication Site Analysis, available at the Stikine Area Forest Supervisor's Office in Petersburg.)

### Proposed in First Year

Within the first year, the applicant proposes to construct and operate a communication site for the purpose of providing space and power for the communication facilities of Rock N' Road Construction Incorporated, Mortronics, and other users in need of mountain top communications. The site would initially consist of the following:

- A communications shell 5 feet in diameter and 10 feet tall, painted black (see Figure 1-1)
- Antennas, solar panels, and a thermal electric generator mounted on the outside of the shell
- Six 100-gallon propane tanks located close to the shelter
- An initial area of 20-feet by 50-feet (1000 square feet)

### Proposed in Years Following

Following the first year, the proposed facility would grow along with the demand for services. Development would include the following:

- An 8-foot wide by 8-foot tall by 12-foot long communication shelter (see Figure 1-2)
- A tower to support receiving antennas, with maximum tower/antenna height of 42 feet above the top of the communication shelter (no guywires required)
- Several transmitting antennas attached directly to the top of the shelter or to short antenna masts (up to 25 feet above the top of the building) (no guywires required)
- A microwave dish mounted on the structure (3-foot diameter)
- 1 thermal electric generator
- 4 500-gallon propane tanks
- Solar panels

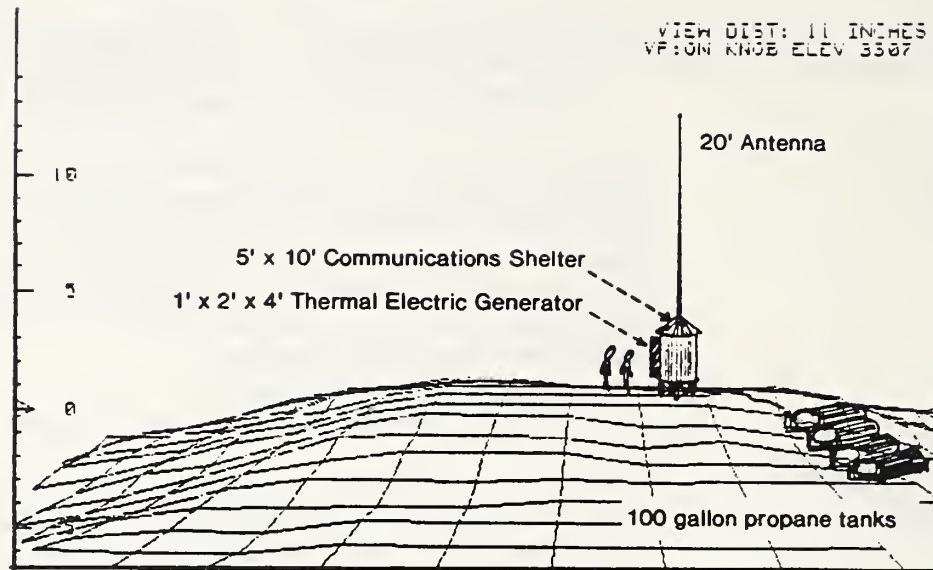


Figure 1-1. Proposed development in first year

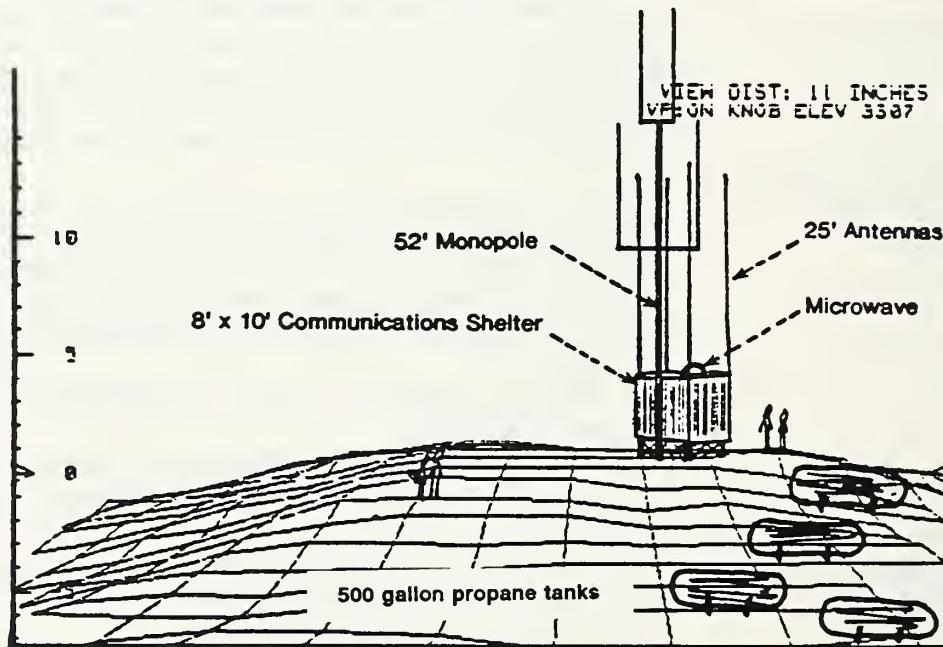
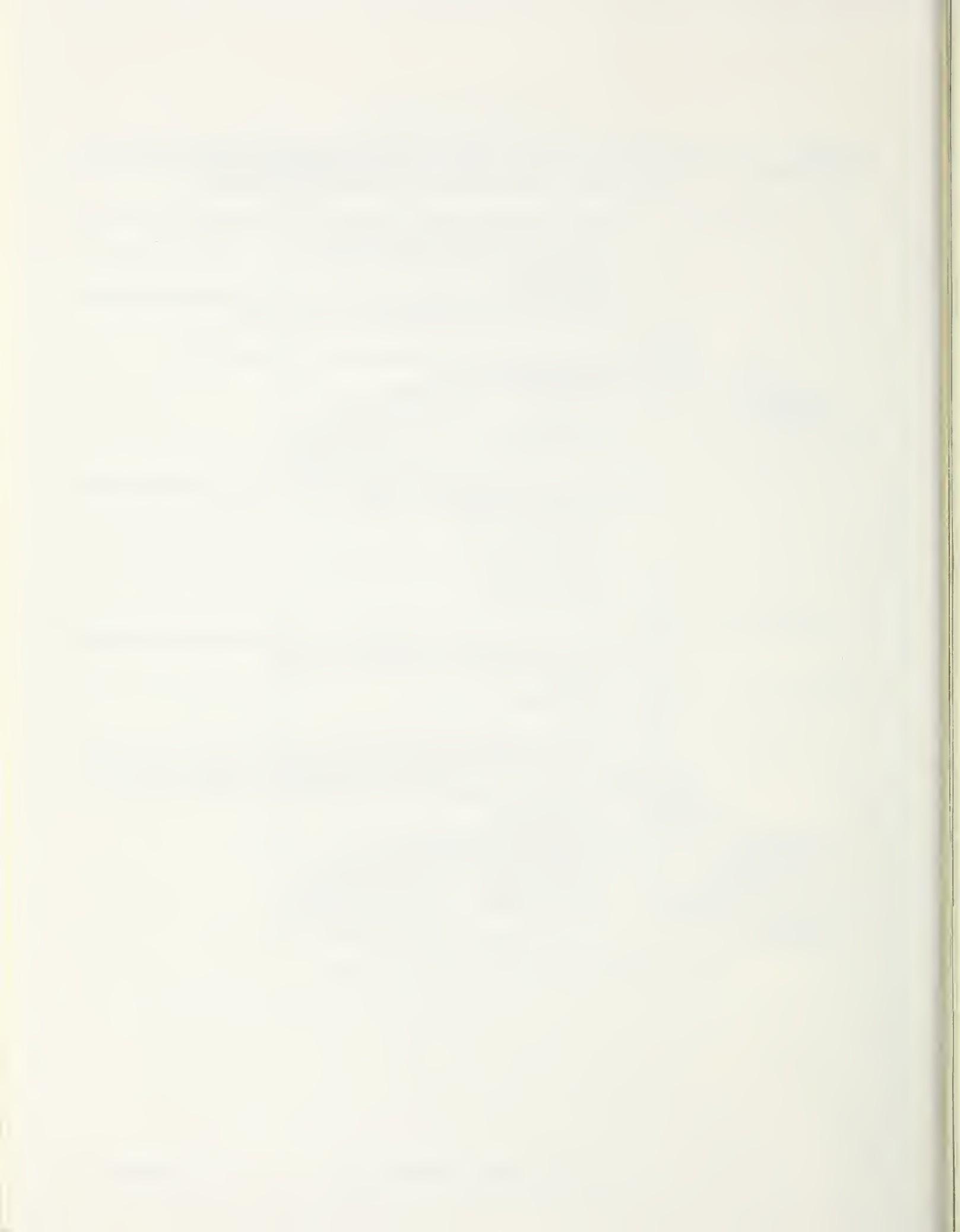


Figure 1-2. Proposed development following first year

## **Key Site Requirements**

A number of site characteristics are required to provide the services proposed by the applicant. All of these characteristics are available on Crystal Mountain (see maps available in Stikine Area-wide Communication Site Analysis):

- Provides line-of-sight contact to Petersburg and Wrangell for control link for
  - Remote monitoring and control of radios
  - Low power, handheld radio and cellular phone systems in Petersburg and Wrangell
  - Microwave link to allow many channels on each frequency (as opposed to one channel per frequency with VHF/UHF radio)
- Provides low power coverage of population centers including
  - Petersburg
  - Kupreanof
  - Wrangell
  - Point Baker
  - Coffman Cove
- Provides low power coverage of State of Alaska land selection areas including
  - Frederick Point South
  - Blind Slough South
  - Thomas Bay
  - Wrangell Narrows
  - Coffman Cove
  - St. Johns Harbor
- Provides as much additional low power coverage as possible in rural areas for use of handheld radios and radio pagers by:
  - loggers
  - rural residents
  - hikers
- Provides low power VHF/UHF coverage of major fishing and marine traffic areas. (While most commercial boats use high powered radios, many recreational boaters rely on low powered, handheld radios.) Bodies of water include
  - Sumner Strait
  - Chatham Strait
  - Zimovia Strait
  - Frederick Sound
  - Duncan Canal
  - Clarence Strait



# **Appendix B**

## **Remand Notice**



United States  
Department of  
Agriculture

Forest  
Service

Washington  
Office

14th & Independence SW  
P.O. Box 96090  
Washington, D.C. 20090-6090

Reply To: 1570-1 (LMP)

Date: October 29, 1990

CERTIFIED RECEIPT REQUESTED

Ms. Beverly Richardson  
Narrows Conservation Coalition  
P.O. Box 958  
Petersburg, Alaska 99833

Ms. Beverly Reitz  
Crystal Mountain Club  
P.O. Box 1441  
Petersburg, Alaska 99833

RE: Appeal of the Crystal Mountain Environmental Analysis and Decision Notice designation of a communications site on the Petersburg District of the Tongass National Forest (#90-13-00-0230)

Dear Ms. Richardson and Ms. Reitz:

Enclosed is our decision on your appeal of the Environmental Analysis (EA) and Decision Notice and No Finding of Significant Impact (DN/FONSI) of the communications site designation of Crystal Mountain on the Petersburg District of the Tongass National Forest. Your appeal was filed under appeal regulation 36 CFR 217.

You are representing the Narrows Conservation Coalition and the Crystal Mountain Club.

**DECISION SUMMARY**

On the basis of the information provided, we conclude that the decision to amend the Forest Plan to designate Crystal Mountain a communications site lacks sufficient documentation, and because of this lack of information, we are unable to ascertain the level of environmental impacts. We are therefore remanding the decision to the Regional Forester for additional analysis in compliance with the National Environmental Policy Act (NEPA), and for a new decision document.

This decision focuses on whether designation of the Crystal Mountain site would significantly affect the environment, and whether the EA complies with Forest Service Interim Directive No. 68. Your remaining appeal issues, including a Forest-wide communications site study, will be considered in the additional NEPA analysis. We are requesting that the Regional Forester consider each of the points in your appeal as part of that analysis.

## PROCEDURAL BACKGROUND

On June 6, 1990, Regional Forester Mike Barton signed the Decision Notice and Finding of No Significant Impact. On July 25, 1990, you appealed the decision. As part of your appeal, you requested a stay. The stay was denied in a letter to you dated September 4, 1990.

## ISSUES

You raise the following concerns in your Notice of Appeal (NOA):

1. Whether the decision adequately considers potential cumulative environmental effects in accordance with 40 CFR 1508.7, 1508.8 and 1508.27 (NOA, page 3).
2. Whether viable alternative sites exist (NOA, page 4).
3. Whether designation of Crystal Mountain as a communications site would significantly affect the quality of the human environment (NOA, page 5).
  - a. Whether designation would result in "significant" impacts as defined by 40 CFR 1508.27 B(1) (NOA, page 5).
  - b. Whether designation would result in effects on the quality of the human environment that are likely to be highly controversial (NOA, page 6).
  - c. Whether the EA addressed effects of designation on future recreation use (NOA, page 7).
  - d. Whether the cumulative effects of designation were adequately considered (NOA, page 7).
4. Whether the EA adequately discusses mitigation measures to conclude recreation and visual impacts would not be significant (NOA, page 8).
5. Whether the EA adequately examines the demand for an additional communications site (NOA, page 9)..
6. Whether the relative values of the resources have been analyzed and disclosed in accordance with NEPA, Section 102(2)(B) (NOA, page 10).
7. Whether designation of Crystal Mountain as a communications site constitutes a significant amendment to the Tongass Land Management Plan (TLMP) (NOA, page 10).
8. Whether the EA complies with Interim Directive #68 of Forest Service Manual (FSM) 2728 (NOA, page 11).
9. Whether the designation and development of Crystal Mountain as a communications site is compatible with recreational use in the area (NOA, page 12).

**RELIEF REQUESTED:**

As relief you request (NOA, page 13):

1. Crystal Mountain remain free from a communications site designation,
2. An alternative site or combination of sites be chosen if additional sites are found to be necessary, and
3. The alpine area of Crystal Mountain be given permanent protective status such as a Semi-Primitive Recreation prescription in the TLMP Revision.

**ANALYSIS OF ARGUMENTS**

We focused our review on two of the issues you raised:

**ISSUE #3:** Whether the designation of Crystal Mountain as a communications site would significantly affect the quality of the human environment (NOA, page 5). You suggest that this designation would significantly affect the quality of the human environment, and refer to the criteria characterizing "significantly" in 40 CFR 1508.27(b)(4), (6), and (7).

**ISSUE #8:** Whether the EA complies with Interim Directive No. 68, Forest Service Manual Chapter 2728 - Special Uses Administration, Communications, (August 25, 1989) (NOA, page 11).

You note that the Forest Service failed to: (1) prepare a Forest-wide communications site analysis, and (2) address current and future communication needs, site consolidation, and the future development of the site.

**DISCUSSION**

**ISSUE #3:** There is considerable disagreement over the significance of the environmental impacts resulting from the proposed action. In the comments received during scoping, Crystal Mountain was identified as a unique recreation site receiving considerable summer and winter use. Many people were concerned about the diminished or lost recreation opportunities which may occur as a result of the proposed action. Both the Recreation Specialist's report and the EA fail to respond to these concerns. The EA's general discussion of the designation of Crystal Mountain lacks the detail and quantitative analysis necessary to evaluate the significance of the environmental impacts as required in 40 CFR 1508.27 (1989).

In addition, the EA fails to adequately analyze the cumulative impacts of the proposed action. For example, the physical and economic advantages of future development of Crystal Mountain suggest that it is reasonably foreseeable that increased use of the site will occur. Also, the impact of the proposed action upon future recreation use is not fully addressed. The analysis of these and other cumulative impacts is not adequately developed in the EA. Thus, there is no basis for evaluating their significance as required by 40 CFR 1508.7, and 1508.25(a)(2) (1989).

ISSUE #8: The EA does not contain or refer to the Forest-wide communications site analysis recommended by the Interim Directive No. 68 (which was reissued as Interim Directive No. 90-3 on October 4, 1990). While alternative sites for this specific proposal were examined, there is no analysis of their relationship to the 12 currently designated sites on the Stikine Area of the Tongass. The EA does not present information on future expansion at the Crystal Mountain site, a reasonably foreseeable event given the site's advantages and the Interim Directive's direction to maximize the efficient use of sites.

A Forest-wide communications site analysis is necessary to provide information about past, present, and future actions to which the proposal may be connected, and about actions with which it may create cumulative impacts.

#### DECISION

The decision to amend the TLMP to designate Crystal Mountain as a communications site lacks sufficient documentation, and because of this lack of information, we are unable to ascertain the level of environmental impacts. We are therefore remanding the decision to the Regional Forester for additional NEPA analysis, and for a new decision document.

This decision is the final determination of the Department of Agriculture, unless the Secretary, on his own motion, elects to review the decision within 15 days of receipt (36 CFR 217.17).

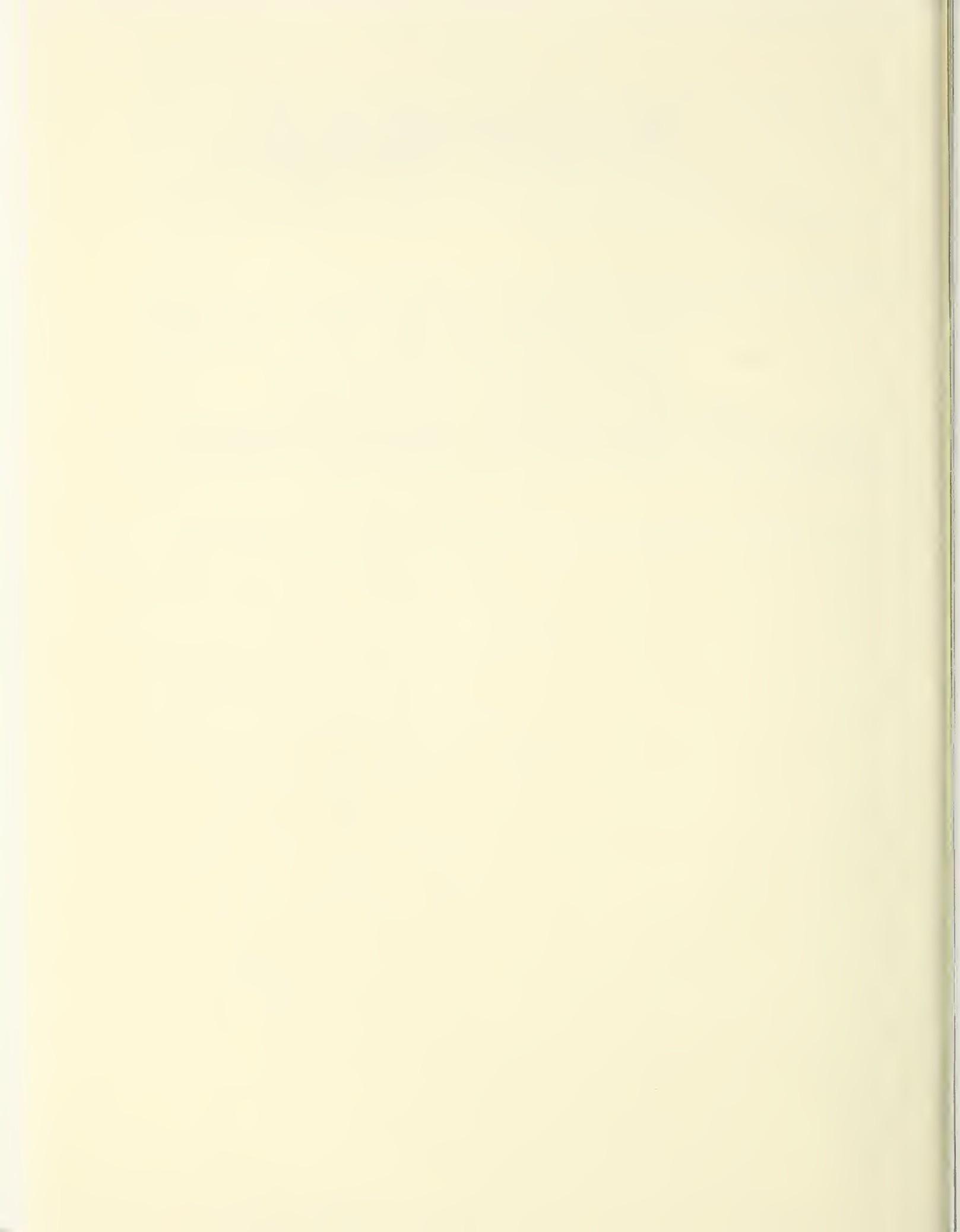
Sincerely,

/s/ Larry Henson

LARRY HENSON  
Reviewing Officer for the Chief

# **Appendix C**

## **Comments on Draft EIS and Forest Service Response**



# **APPENDIX C**

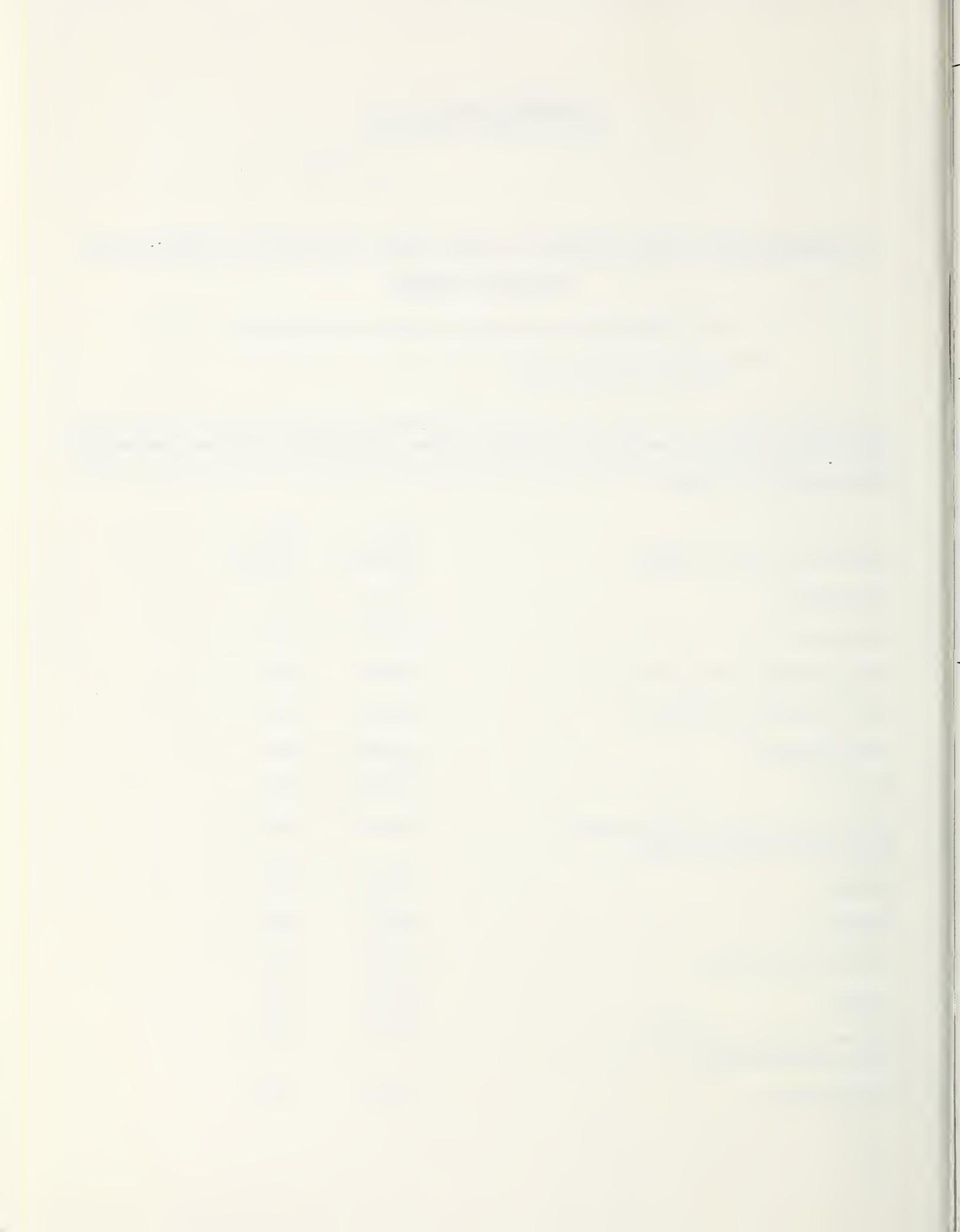
## **COMMENTS ON DRAFT EIS AND FOREST SERVICE RESPONSE**

04-19-91: Notice of Draft EIS Availability Published in Federal Register

06-03-91: Final Comment Date

This appendix includes a copy of the letters responding to the Draft EIS and received by the 6-03-91 final comment date. The date each letter was received is date stamped or written on the first page of each letter. Each comment was then numbered in the margin. Following each letter, the numbered comments are paraphrased and the Forest Service response is described.

<i>COMMENTING PERSON OR GROUP</i>	<i>DATE RECEIVED</i>	<i>PAGE NUMBER</i>
Tim Chittenden	5-1-91	C-1
Dixie Baade	5-14-91	C-7
Greg Harris, Mitkof Lumber Company, Inc.	5-22-91	C-15
Bonnie Westlund and Daniel Savone	5-29-91	C-19
Beverly Richardson	5-29-91	C-23
Eric M. Lee	5-29-91	C-55
Paul D. Gates, Regional Environmental Officer, United States Department of Interior	5-30-91	C-63
Paula Rak	5-31-91	C-67
Beth Flor	6-3-91	C-73
Don and Karen Cornelius	6-3-91	C-77
Bev Reitz	6-3-91	C-81
Lorraine Marshall, Alaska Division of Governmental Coordination	6-3-91	C-105
Deborah Boettcher	6-3-91	C-113



Mark Hummel :

Response to Crystal Mountain Communication Site  
Designation Draft E. I. S.

I have read the EIS and with a very few acceptable exceptions I find it understandable, thorough, readable and logical.

I wish to make the following comments concerning:

Summary page IV

Appendix A page 6

I agree with the Forest Service identification of the preferred alternative and that "... designation of Crystal Mountain as a communication site is compatible with recreation use of the area."

Table 4-2 page 4-10

In the Frederick North Subdivision Land Appraisal publication, the state of Alaska estimated that by year 2020 the population of Peters Hwy would be 5,200. It seems likely that Wrangell may experience a similar or greater proportional population growth.

Any such substantial growth in these communities would result in the user cost factor for Alternative 1 decreasing

{ ① disproportionately to that of Alternative 1 and Alternative 2B, progressively into the future, making Alternative 1 even more preferred from an economic standpoint.

Table 4-1 page 4-9

{ ② In general I agree with the relative (lesser \$ amounts to greater \$ amounts) presentation of costs. My suggestion is that an in depth cost analysis would show that Alternatives 2A and 2B compare even less favorably with Alternative 1 than what table 4-1 shows, particularly when analysed in terms of Present Net Worth and incorporating potential user populations.

Of what importance is cost if relationship to return is not analysed?

{ ③ It is my intuitive observation that Alternative 2B site development & fueling and maintenance costs are disproportionately low. If you have one communication site and it "goes down" you know where that malfunction is. If you have multiple sites and it "goes down" determining the malfunction becomes more involved and costly. Not to harp on the cost analysis - it is adequate.

Statements about trail developmentSummary iii4-11

I do not consider construction of a completed trail on Crystal Mountain likely in the near future. While marginally physically feasible and pleasant to contemplate, I believe it is not economically feasible, if designed and constructed to any acceptable standards.

Plans for Recreation Trail.3-3

Vague statements about preliminary design objectives and a "memo dated 2/11/91" about ideas for a trail design narrative do not constitute a "Plan" in my mind.

If the trail plan process was anywhere near on track, including the capital investment project, there would be no need to make the disclaimer concerning Survey, design, and construction being dependant on availability of funds. If the public is being told a trail will be built then the Forest Service should do it, to Forest Service Standards.

Please acknowledge receipt  
No specific response necessary

Thanks

Tim Chittenden

# C Appendix

## Letter From Tim Chittenden

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**Comment 1:  
(paraphrased)**

Regarding the cost analysis in Table 4-2 on page 4-10, the communities of Petersburg and Wrangell are likely to grow in the future, making the cost factor for Alternative 1 even more attractive than Alternatives 2A or 2B.

**Response 1:**

That is indeed possible; however, we do not consider this cost analysis accurate enough to warrant calculation of anticipated population growth into the cost factor. The same population growth that would improve the cost factor for Crystal Mountain could also improve the cost factor for the Sumner and Lindenber/Zarembo options.

Please note, however, that there was an error in the calculations for the Crystal Mountain cost factor. The low power population should have been listed as 5000 people, not 3550, thus the Low Power Factor is 3.0 rather than 4.2, and the User Cost Factor is 2.6 rather than 3.2. In other words, the cost factor for Crystal is more favorable than the Draft EIS indicated.

---

**Comment 2:  
(paraphrased)**

Regarding the cost analysis in Table 4-1 on page 4-9, Crystal Mountain would compare even more favorably if analyzed in terms of Present Net Worth and incorporating potential user populations.

**Response 2:**

That's true, but the relative ranking is still the same. Potential user populations were calculated into the cost factor developed in Table 4-2. The point of Table 4-2 is to develop a factor that includes potential user populations.

---

**Comment 3:  
(paraphrased)**

On page 4-8 and in Table 4-1, the fueling and maintenance costs for the Lindenber/Zarembo combination are too low. If you have one communication site and it "goes down," you know where that malfunction is. If you have multiple sites that are linked and it "goes down," determining where the malfunction occurred becomes more involved and costly.

**Response 3:**

We agree that it's more difficult to find the problem if a multiple-site system "goes down." That's why we asked the applicant to estimate how much more it would cost for fueling and maintenance of a two-site system. He estimated \$8000 per year per site, plus an additional \$2000 per year to track down the location of the problem. These figures are described on page 4-8 of the Draft EIS. They were also used to calculate the annual cost in Table 4-1 and the cost factor for each alternative in Table 4-2.

---

# C Appendix

## **Comment 4: (paraphrased)**

Regarding trail development on page iii and Chapter 4, page 11, I do not consider construction of a completed trail on Crystal Mountain likely in the near future. It is not economically feasible to design and construct a trail up to the summit to any acceptable standards.

## **Response 4:**

As stated in the Draft EIS on page 3-3, a trail is scheduled for construction in 1993 depending on the availability of funds. The design narrative and National Environmental Policy Act analysis are scheduled for 1991 and trail survey and design work are scheduled for 1992.

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## **Comment 5:**

Regarding plans for a recreation trail on page 3 of Chapter 3, "If the trail plan process was anywhere near on track, including the capital investment project, there would be no need to make the disclaimer concerning survey, design, and construction being dependent on availability of funds. If the public is being told a trail will be built then the Forest Service should do it, [and do it] to Forest Service standards."

## **Response 5:**

The survey and design work will be performed as described. As with any recreation project, however, the Forest Service receives its budget each year as an appropriation from Congress. Consequently, it is impossible to know in advance exactly how much will be available. Given the President's "America's Great Outdoors" recreation initiative, however, it seems reasonable to think that funding may be available.

---

P. O. Box 1530  
Petersburg, Alaska 99833  
May 10, 1991

*Rec'd May 14, 1991*  
Mark Hummel, Team Leader  
P. O. Box 309  
Petersburg, Alaska 99833

Dear Mr. Hummel:

Once again I wish to express my opposition to the designation of Crystal Mountain as a Communications Site. It is not compatible with the designation in the TLMP revision, classifying Blind Slough and Crystal Mountain as a Recreation Special Area. Crystal Mountain is an integral part of this. }①

There is an alternative, 2b, Lindenberg/Zarembo that will provide service comparable to Crystal Mountain without the conflicts. Both are already designated Communication sites. This alternative meets the described needs. }②

Any additional costs due to the selection of the Lindenberg/Zarembo alternative could well be balanced by the costs resulting from vandalism. The need for repairs and fencing that would be necessary as well as more frequent monitoring over the years would be costly. There would also be probable disruptions in service. }③

I consider vandalism inevitable. It should not be lightly dismissed. Long experience in trying to help maintain a Ski cabin on Deer Mountain above Ketchikan proved impossible. There has been vandalism at both Forest Service cabins on the mountain and ridge. The combination of increased access along with a vulnerable structure will prove too inviting. Even with a fence there will be the problem of gun shots. At our Deer Mountain cabin we could not keep stove pipes. They were favored targets. At just over 3000 feet Deer Mountain is just slightly lower than Crystal. }④

From my experience it appears that only sites with helicopter access only are safe from vandalism. If you can drive to it, walk to it, boat to it, or even use a plane to get to it, forget it. }⑤

Another alternative that should not have been dismissed so prematurely is that of satellite communication. I've enclosed 2 clippings from the Juneau Empire regarding investigation of Poker Flats north of Fairbanks. It would have the capability to cover most of the globe. We may well be sacrificing a favored recreational mountain to an obsolete communications technology. }⑥

The problems that may arise from long-term expansion should not have been dropped since once the site is designated and developed there is no control. Once improvements are in place, changing the management direction becomes difficult if not impossible. When vandalism occurs it would be virtually impossible to prevent construction of a fence and another attempt to limit access to the summit. And this limitation, by the way, will prevent access only to those who abide by rules and regulations. }⑦

## C Appendix

(7) In 1989 the applicant appeared to recognize the incompatibility of his project with recreational access to the mountain. Though he has now dropped his proposal of restricting access it will no doubt be another matter when problems occur.

(8) The applicant appears to feel that there are plenty of areas for semi-primitive recreation. Obviously these are not on Mitkof Island with easy access. There is no other area on Mitkof Island with the opportunity for winter recreation under semi-primitive conditions. Since snow lasts longer at that elevation, there is the opportunity for spring skiing. For any skier, past or present, the opportunity to ski "corn snow" is something to be cherished.

(9) One would not want to make the effort to climb to the summit if faced with the proposed developments. On a personal note, again, with reference to Deer Mountain, I used this mountain and the ridge for roughly 25 years. It afforded the same accessible semi-primitive recreation opportunities as Crystal Mountain, hiking, camping and skiing. Skiing was possible into May most years and sometimes into June. I would never have used the mountain if such a facility had been there. For a short time there was a TV relay tower, (two in fact) and even with no noise or odor, its presence was an unwelcome visual intrusion. Fortunately, in this case the weather took care of the problem. The towers, one after the other, and the second in concrete, blew down. I don't believe the first was ever found. This development, if allowed, would be a worse intrusion. There would scarcely be a "pristine" or quiet environment.

As for alternate sites for recreation, there are adequate areas for those who would find no conflict with the proposed development. Crystal Mountain offers the kind of semi-primitive recreational experience most recreationist desire. As a former vice-president for Alaska of the Federation of Western Outdoor Clubs I have a fairly good idea of what recreationists want.

(10) I see a few problems other than the conflict with recreation. Chapter 1, p. 4, mentions the addition of microwave service. There has been a great deal of attention lately as to the hazards of microwave radiation. This is a serious matter and deserves thorough investigation.

(11) Can there really be a guarantee that runoff can be prevented. I don't feel this subject should be dismissed. There are too many examples of unexpected oil leaks from all kinds of facilities. In addition to operator negligence, there is the constant threat of vandalism.

(12) More attention should be paid to the tolerance or intolerance of resident species to noise and exhaust fumes. The DEIS mentions breeding populations of rock and willow ptarmigan and the American pipit.

I urge that the preferred alternative be changed to Lindenberg/Zar-  
embo. It cannot be argued that this is not a reasonable alternative.

Sincerely yours,

Dixie M. Baade

# Rocket firm interested in Poker Flat

THE ASSOCIATED PRESS

**ANCHORAGE** — A Virginia aerospace company is considering using a rocket range north of Fairbanks as a future base to launch small commercial satellites, its president said late Wednesday.

MicroSat Launch Systems sent a scouting crew to Alaska last week to Poker Flat Rocket Range, about 25 miles north of Fairbanks, to investigate and was quite pleased, said Peter Diamandis, MicroSat's president.

"We have been pursued by a number of different launch sites, and we are very interested in Alaska as a base of operations," he said.

*Juneau Empire April 18, 1991*

Diamandis said his two-year-old Vienna, Va.-based company was formed to send satellites under 300 pounds into orbit.

The company intends to break into the commercial space market, which the MicroSat president says is the world's fastest growing new industry.

Glenn Olds, commissioner of the Alaska Department of Commerce and Economic Development, said MicroSat plans to bring three of the world's top aerospace companies together for the deal. He listed the three as Rolls-Royce Motors Inc., Defense Systems Inc. and an unidentified Norwegian concern.

"I told the Legislature this afternoon that space, its mastery and development will be the most critical frontier of the world's future development," Olds said.

The commissioner accompanied Diamandis and his entourage on the tour last week, and Sen. Frank Murkowski, R-Alaska, and state Rep. Tom Moyer, D-Fairbanks, also were there.

The commissioner said an Alaska launch site offers the unique capability of polar orbit which enables an orbiting satellite to cover most of the globe from above.

# They're all fired up about Alaska role in satellite launchings

By DEAN FOSDICK

**POKER FLAT** — In reputation, this launch site on the permafrost doesn't have the throw-weight of Kennedy Space Center or the USSR's cosmodrome at Tyuratam, the world's largest.

But given its proximity to the North Pole and high success rate for suborbital, scientific launches, Poker Flat may be just months away from a contract that would make it a first-team player in the emerging commercial satellite market.

"It's as though the universe has contrived to put us in the right place at the right time," said Glenn Olds, commissioner of the state Department of Commerce and Economic Development and probably the range's biggest ground-based booster.

"We should be closing a deal on the funding and so on in the next few months," Olds said last week. "We brought one of the big financial people and several others from a commercial satellite company up here last week. Their minds were boggled. I would expect we'd launch in '93... [at] Poyer Flat, about 35 miles east of Fairbanks, gets its' name from a nearby creek and a Bret Harte short story about a group of outcasts abandoned in a blinding blizzard.

Its remoteness in the Alaska interior has helped keep it a secret to all but those in the scientific or space communities.

But 11 companies have contacted

launches from Poyer Flat.

Construction began on the subarctic rocket range in 1968 after scientists at the University of Alaska's Geophysical Institute saw a need to reach into the Aurora Borealis — the mystical northern lights.

The lowering cathedral of multicolored lights dance in the northern skies some 70 to 150 miles above the earth, said Neal Brown, a scientist with the institute who ran the range for more than a decade. They're intensely bright and colorful over interior Alaska.

"A rocket is the only way to get inside the aurora," Brown said. "Planes don't go that high and satellites come down that far would fall out of orbit."

Poker Flat had made 234 suborbital and unclassified launches through Feb. 12, racking up a success rate of well over 90 percent.

"That's the kind of record that has companies producing small-payload satellites looking at the site, assessing its commercial potential," Peter Diamandis, president and chief executive officer of MicroSat, in Herndon, Va., was quoted about his company's plans after touring the range earlier this month, but conceded Poyer Flat could capture an important segment of the \$40 billion U.S. space industry.

"We're focusing on the microspace niche in the marketplace," he said.

Micro-satellites are described as a more reliable way of making space available to smaller companies and universities.

Weighting 300 pounds or less, they

*Jurassic Empire April 3, 2, '91*



**Observation dome:** Cliff Moore, a scientist at the Poker Flat Research Range near Fairbanks.

country, said Jack Dillard, a large squarely-built man who took over as range manager last summer.

"The biggest thing we can offer that we don't have as many government regulations inhibiting our launch capability," said Dillard, who shared hard hats with space industry leaders while working as a senior engineer at Martin Marietta and vice president of engineers at Dee Howard Co.

"That means shorter turnaround time — less time between court-mandated rewrites. They don't have to go through a myriad of red tape to get a launch out here."

"I think the key to the whole thing is getting the first orbital launch off here and then people will be lining up to do it."

hand-me-downs from the military or NASA.

Five small, rail-guided launchers like those used for antiaircraft missiles are spotted about the range, rather than the more familiar towers used for vertical launches.

A flat-tire road grader lopped with a wooden boxlike cradle for moving small booster rockets from assembly site to launcher sits abandoned alongside a narrow dirt road.

And a single-story, wood-frame "Poker Inn" is hotel, restaurant and gathering place for a range staff of about a dozen people who commute daily to Fairbanks.

It may not have infrastructure, but it does have geography and it's civilian-owned and managed — the only university-operated cause in the country.

## Letter From Dixie Baade

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**Comment 1:  
(paraphrased)**

Designation of Crystal Mountain as a communications site is not compatible with the Recreation Special Area designation proposed for Crystal Mountain and Blind Slough in the Forest Plan Revision.

**Response 1:**

(In the Draft EIS we called it a Recreation Special Area when in fact, it has been proposed as a Special Interest Area in the Forest Plan Revision, with an emphasis on zoologic and scenic values.)

We agree that a communication designation within a Special Interest Area is not encouraged in the Forest Plan Revision. Special Interest Areas are to be avoided by Transportation and Utility Systems according to the June 1990 Draft EIS of the Revision (Volume III, page F181). According to the draft, "Transportation and utility sites and corridors may be located within a Special Interest Area only after a search for Transportation and Utility System "windows" has been exhausted.

However, until the Forest Plan Revision is completed, the 1985/86 Forest Plan Amendment is the document that guides us. There is currently no Scenic Special Area status for Crystal Mountain and Blind Slough.

If Crystal Mountain were designated as a communication site, it is still possible that the Crystal Mountain and Blind Slough area could be designated as a Special Interest Area in the Forest Plan Revision because the search for alternative "windows" has been exhausted in the communication designation analysis.

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**Comment 2:  
(paraphrased)**

The Lindenberg/Zarembo combination is already designated and can provide comparable service to that offered from Crystal Mountain, without the conflicts.

**Response 2:**

We agree that there are no conflicts with recreation users on Lindenberg and Zarembo Mountains. However, it is also true that a two-site facility would cost considerably more and would also provide less reliable service.

---

**Comment 3:**

"Additional costs due to the selection of the Lindenberg/Zarembo alternative could well be balanced by the costs resulting from vandalism. The need for repairs and fencing that would be necessary as well as more frequent monitoring over the years would be costly. There would also be probable disruptions in service."

**Response 3:**

The possibility of vandalism does not seem to the Forest Service to be a reason not to allow someone the chance to offer communication services in the area. See response 6, Baade letter.

---

# C Appendix

**Comment 4:  
(paraphrased)**

Vandalism is inevitable, even with a fence. I've had experience trying to help maintain a ski cabin and it was impossible. The vulnerable structure will prove too inviting to vandals.

**Response 4:**

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See responses 3 and 6, Baade letter.

**Comment 5:  
(paraphrased)**

The satellite option should not have been dismissed so quickly. We may well be sacrificing a favored recreational mountain to an obsolete communication technology. See the attached articles on the interest in launching satellites from Poker Flat, 35 miles north of Fairbanks.

**Response 5:**

The articles to which you refer discuss the use of satellites in "microspace" to study the Aurora Borealis, spot schools of tuna off the South American coast, make observations for weather forecasting, and bounce television signals back to earth. They don't say anything about systems that might replace VHF, UHF, or microwave radio communication.

We recently called Motorola, the company planning to ring the Earth in satellites, to find out the current status of satellite technology for day-to-day communications. According to a company spokesman, such communication may be possible by 1996 and it may be cost effective by 2001.

Assuming the Motorola satellites are launched and operate as planned, ground stations will probably still be used in conjunction with satellite technology rather than being replaced. Users of handheld radios would not have enough power to transmit directly to satellites and would need to beam a signal to a ground station in order to amplify the signal before bouncing up to a satellite. In addition, the use of satellites causes greater frequency congestion than land based systems. Two land based systems separated by mountains and a few hundred miles can both use the same radio frequency because they can't reach each other to cause interference. A satellite can talk to such large areas it requires the use of more frequencies to avoid interference. As a result, land based systems and satellites will probably be linked to improve service and avoid frequency congestion in the future.

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**Comment 6:  
(paraphrased)**

The problems that may arise from long term expansion should not have been dropped because once improvements are in place, changing the management direction becomes difficult if not impossible. When vandalism occurs it will be impossible to prevent construction of a fence to limit access to the summit.

**Response 6:**

See response 1, Richardson letter, regarding analysis of reasonably foreseeable development and cumulative effects.

We don't consider the recreation access issue to have been dropped. The Forest Service will maintain recreation access to the summit. Although this EIS addresses the designation decision, we discussed this point with the applicant recently and he said he sees no reason for fencing. He would install closed circuit surveillance and prosecute the first offender heavily, expecting that that would deter future vandalism. He would also plan to enclose most of the operation inside the shelter, which would prevent the opportunity to vandalize. Finally, he may want to wrap concertina wire around the top of the shelter to protect the antennas mounted on the shelter.

See Chapter 2 of the Final EIS for a list of limits associated with each Alternative.

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- Comment 7:  
(paraphrased)**
- In 1989 the applicant appeared to recognize that his proposal was incompatible with the recreational access to the mountain when he proposed restricting recreational access. He dropped his objections to access right now, but when problems occur, he'll want to prevent access again.
- Response 7:**
- See response 6, Baade letter.
- 
- Comment 8:  
(paraphrased)**
- The applicant appears to feel that there are plenty of areas where recreationists could go instead of Crystal Mountain, but there is no other place on Mitkof Island that offers the alpine environment, access, and spring skiing.
- Response 8:**
- We agree that there is no other place on Mitkof Island that provides the same combination of amenities provided by Crystal Mountain. The Draft EIS acknowledges that some users would be displaced. Issue number (2), *compatibility with recreation use*, addresses your question throughout the document, especially on page 4-2 through 4-4 and A-4 and A-5. For those people who would no longer recreate on Crystal Mountain, this would indeed be a loss. It would also be a loss for people who would still go to Crystal Mountain but enjoy it less. Just as people might choose to stay off Crystal Mountain, they would then choose whether to seek a similar activity elsewhere or pursue a different activity. Or they could still adapt to changes on Crystal Mountain. Crystal Mountain would still offer access, alpine environment, hiking, snowshoeing, skiing, and spectacular views from the summit.
- The Draft EIS did not suggest that a communication facility would be great for recreation, or that it would have no impact. It clearly would have impact on the recreation experience. The setting would change from *semi-primitive* to a more developed setting. The point is that one use would not exclude the other.
- 
- Comment 9:  
(paraphrased)**
- One would not want to make the effort to climb to the summit if faced with the proposed developments. I used a similar area near Ketchikan for 25 years and I would never have used the mountain if such a facility had been there.
- Response 9:**
- See response 8, Baade letter.
- 
- Comment 10:  
(paraphrased)**
- There has been a great deal of attention lately as to the hazards of microwave radiation. This is a serious matter and deserves thorough investigation.
- Response 10:**
- In a normal fishing harbor there is more radiation hazard from boat radar than would be generated from a small scale, mountain top, microwave communication facility. A microwave antenna would be mounted on top of a structure and would not focus its energy on mountain top users.

## C Appendix

**Comment 11:**  
(paraphrased)

There are too many examples of unexpected oil leaks from all kinds of facilities. Can there really be a guarantee that runoff can be prevented?

**Response 11:**

Propane exists as a vapor at temperatures above -45 degrees fahrenheit. As a result, propane generally does not "spill" as diesel fuel or gasoline might. If the facility were eventually to include diesel power, additional environmental analysis would be performed and spill containment would be required. As for a guarantee, no, there are never any absolute guarantees.

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**Comment 12:**  
(paraphrased)

More attention should be paid to the tolerance or intolerance of rock ptarmigan, willow ptarmigan, and American pipits to noise and exhaust fumes.

**Response 12:**

An electric powerline would be silent. The noise from the proposed propane thermal electric generator would not be audible more than a few feet from the communication shelter. Diesel would be louder. Noise and fumes from propane or any other fuel combustion were not considered an issue of concern by any of the State or Federal wildlife biologists consulted.

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# Mitkof Lumber Company, Inc.

Post Office Box 89 • Petersburg, Alaska 99833 • Phone (907)772-3816

U.S. Forest Service  
Tongass National Forest  
Supervisors Office  
P.O. Box 309  
Petersburg, AK 99833

Attn: Mark Hummel - Team Leader

Re: Crystal Mountain Communicator Site Designation (Draft E.I.S.)

May 20, 1991

Dear Mr. Hummel:

Mitkof Lumber Company is in favor of alternative #1 or any other consideration which will provide better communications to outlying areas.

Each year we contract out logging and road building jobs in the neighborhood of 125 individuals. Most of the time these jobs are outside of current and conventional use.

Among the many beneficial factors this communication site would provide are; medical emergencies, family emergencies, and improved business communications with individuals, industries, and Governmental agencies involved with timber harvesting.

Sincerely,

Greg Harris  
General Manager

cc: Pat Ford  
Chilkoot Lumber  
file

Station Area	
...y 22 '91	A.R.
Forest Supv.	
P.I.O.	
A.O.	
Eng. Staff	
F&WL Staff	
Planning Staff	
R.L. Staff	
S&W Staff	
Timber Staff	
Psba. Dist.	
Wmgl. Dist.	

# C Appendix

## Letter From Greg Harris, General Manager, Mitkof Lumber Company, Inc.

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**Comment 1:  
(paraphrased)**

The comments from Greg Harris indicated a preference for designation of Crystal Mountain as a communication site and described that the company contracts logging and road building jobs to approximately 125 people who require communication services on the job. He also described that the types of use would include medical emergencies, family emergencies, and improved business communications with individuals, industries, and governmental agencies involved with timber harvesting.

**Response 1:**

These comments do not seem to request or require response.

---

# C Appendix

Received on desk 5-29-91 AM

May 27, 1991

Dear Ms. Hurrel,

I wish to submit a comment on the Crystal Mountain Communication site designation. Being rural residents of the lower Fernell Narrows we are well aware of the need for good communication in a rural setting - for safety as well as convenience. We are also aware and have experienced the unique alpine setting on the top of Crystal Mountain but cannot personally identify with a classification of wilderness when the climb to the top is a visual journey through man's interruption of the wilderness - a highway, ditch, and 360° of clear cut.

We would hope that we can use this area co-operatively as it is now already being used. Crystal Mountain as a recreation area should not exclude its use as a communication site nor should the site exclude or overly interrupt recreation. They both are valid uses in an already multiple use area. Perhaps

the could help each other as  
the old Sheep Creek Power Line  
did for years in the Jimmiette  
where many winter hikers and  
skiers used the shelter for their  
outing.

② The summit as "in favor"  
for the designation of Crystal  
Mountain as a communication site  
as well as recreation but most  
importantly would hope that  
both would be closely  
monitored for their keeping in  
environmentally clean & favorable  
setting.

Sincerely,  
Bonnie Jeethland  
Daniel Savare

# Letter From Bonnie Westlund and Daniel Savone

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**Comment 1:**

"Being rural residents of the lower Wrangell Narrows we are well aware of the need for good communication in a rural setting -- for safety as well as convenience. We are also aware and have experienced the unique alpine setting on the top of Crystal Mountain but cannot personally identify with a classification of wilderness when the climb to the top is a visual journey through man's interruption of the wilderness -- a highway, a hatchery, and 360° of clear cut. Crystal Mountain as a recreation area should not exclude its use as a communication site nor should the site exclude or overly interrupt recreation."

**Response 1:**

You've described in a nutshell some of the challenges and considerations in managing LUD III lands, where commodity and amenity uses are both allowed.

---

**Comment 2:  
(paraphrased)**

Perhaps the two uses could help each other, for example, winter hikers and skiers using the facility as a shelter during their outings.

**Response 2:**

This possibility was suggested last summer in two public meetings related to the second decision, the site-specific permit for the proposed development. The applicant was not willing to invest any funds in a structure that would be used by recreationists. In addition, some recreationists suggested that a shelter might not be the best way to develop recreation on Crystal. They thought the idea should be considered in the future, when the trail is actually being designed.

---

**Comment 3:**

"...most importantly [we] would hope that both users would be closely monitored for their keeping an environmentally clean and favorable setting."

**Response 3:**

This EIS, on whether to designate a site, does not address such details. However, if a special use permit were issued, it would include guidelines on keeping the summit clean of debris. Since recreation use is not permitted to individual users in the same way, different methods would be used if necessary to keep the summit free of litter from recreation users.

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## **C** Appendix

Received 5-29-91

My comments on the Crystal Mountain DEIS are divided into two parts. The first part deals with issues addressed in the appeal that the FS has not adequately addressed in the DEIS, the second half deals with specific wording and comments.

#### PART I.

I will number and address each issue as they are numbered in the remand notice from the Chief.

1. Whether the decision adequately considers potential cumulative environmental effects in accordance with 40 CFR 1508.7, 1508.8 and 1508.27 (NOA pg. 3).

This DEIS fails to adequately address the potential cumulative effects in it entirety. Already the potential permittee is asking for diesel generators, microwave and power lines in addition to his original request. The issue of numerous additional antennae towers, fencing, heli-landings. The DEIS does mention some of these briefly in various spots but is not consistent throughout and is looking at only the potential expansion in the near future saying they can't tell what will happen in the future.

2. Whether viable alternatives do exist.

The maps clearly show that there are alternative sites and combination of sites that can meet the needs of people in the area. The FS is using these maps to show that there is no mountain that provides the same coverage as Crystal. While this may be true, the needs of the area can be met by alternative sites. The FS is confusing the desire of the applicant with the needs of the area.

Other local competing firms are able to currently cover a lot of the areas that the maps show they are no able to cover. It is illogical for the FS to continue to use the maps as their sole source of data and to ignore on the ground data. Since there is an alternative site that says it can cover most of the needed area already the FS should allow this firm to continue to test its coverage of the area in question before allowing Crystal to be developed. ON THE GROUND TESTING SHOULD BE CONDUCTED

The maps show that the Sumner mountain site would almost meet the applicants need and comes within feet of covering the area desired by the permittee. This site should be given more consideration and study to ascertain if an increase in antennae height or power would enable it to be used. ON THE GROUND TESTING SHOULD BE DONE FROM THIS SITE TO SEE IF IT CAN PROVIDE THE REQUIRED COVERAGE, GIVEN THAT THE MAPS SHOW ITS POTENTIAL COVERAGE IS SO CLOSE TO THAT DESIRED.

# C Appendix

- ⑤ { The FS should not be concerned if alternatives sites are economically viable (the cheapest) to the permittee only whether they can provide adequate necessary coverage.
- ⑥ { 3. The DEIS does show that the effects would be significant.
4. Whether the DEIS adequately discusses mitigation measures to conclude recreational and visual impacts would not be significant. (NOA pg.8)
- ⑦ { a The DEIS states clearly that the impact to recreation would be significant but then concludes that the two uses are compatible. The information in the DEIS does not lead to this conclusion.
- b The DEIS also states that visual impacts will be difficult to impossible to mitigate but then again dismisses this by saying that users will adapt or be displaced.
5. Whether the DEIS adequately examines the demand for an additional communication site.
- ⑧ { The FS did a communication needs survey. However the DEIS does not distinguish which of these needs can be met by currently developed sites and currently designated sites or combination of sites. The purpose of the "Communication Site Plan" should be to identify areas not able to be covered by currently designated sites and to therefore limit development of unnecessary additional site and to limit the number of sites impacted by site designations. The FS is however using these maps only to show that no single site gives identical coverage to that provided by a site on Crystal Mountain. The FS has failed to demonstrate that there are valid needs that will go unmet if the Crystal Mountain site is not developed.
- ⑨ { The FS also is confusing the needs of the community and people with the desires of the permittee and a few select individuals.
6. Whether the relative values of the resources have been analyzed and disclosed in accordance with NEPA, Section 102 (2) (NOA, pg 10)
- ⑩ { The FS has not considered the value of Crystal Mountain in its present state in the cost equations. The value of Crystal as a prime undeveloped site far outweighs the value of it as a communication site. This is evident as there is no substitute for Crystal Mountain as recreation where there are alternative sites for communications. The long term relative value of Crystal as a recreation area to the community and visitors far outweighs the economic gain and convenience provided to the permittee and his potential customers who do have other options. This value of Crystal Mountain in its current state must be considered when discussing the cost of developing alternative sites.

7. Whether designation of Crystal Mountain as a communication site constitutes a significant amendment to the Tongass Land Management Plan (NOA, pg 10 ).

This would be a significant amendment.

\*. Whether the DEIS complies with Interim Directive #68 of the Fs Manual (FSM) 2728 (NOA, pg 11)>

The FS has failed to show that there is a need to develop this site. There are clearly alternative sites that would cover the majority of the need of the area. The FS is currently unwilling to do on the ground testing to ascertain whether areas that other individuals and firms say are possible are truly possible. They continue to depend only on their theoretical maps which are only relative.

#### THE FS NEEDS TO CONDUCT TESTING

The FS continue to confuse need with the permittee's desire.

9. Whether the designation and development to Crystal Mountain as a communication site is compatible with recreational use in the area (NOA pg. 12)

Everything in the DEIS leads one to believe that the two will be incompatible yet the DEIS concludes that they are compatible. This is illogical.

The following are examples that the two are incompatible:

The visuals are impossible to mitigate.

There is no way to guarantee possible expansion at the site.

There is everything to suggest that there will be future expansion. This is evidenced by the fact that the permittee is already expanding his potential facility.

There may be facilities on summit, making the summit unobtainable.

There may be fencing should problems occur.

There may be diesel generators with inherent noise and smell and bulk and potential spills.

The trail may be re-routed.

Persons will be "displaced"

There are no alternative similar recreational opportunities in the area.

#### PART II.

(please excuse if I'm off a line or two on line numbering my comments.)

#### SUMMARY

# C Appendix

- (16) pg i. line 5. This DEIS continues to use the word cellular phones. The permittee had stated repeated times that he does not plan to provide cellular phone but a radio phone that is cellular like.
- (17) pg ii. line 22 and 23. The DEIS states that the survey demonstrates a "desire" for services that can be provided by Crystal. The point should not be what can be provided by Crystal but what "needs" can be provided ONLY by a site on Crystal. Most of these desires can be provided by alternative sites.
- (18) pg ii, line 15. Insert the word "both".
- (19) pg ii, line 16. Define "closest"
- (20) pg ii, There should be a paragraph in the introduction describing the present and long term use of Crystal Mountain as a recreation site.
- (21) pg ii, line 34. There are direct effects on Crystal Mountain. It can be permitted to be developed as a communication site as a consequence. It land use is changed.
- (22) pg iii. line 10. "would provide no services" should read "may not provide services"
- (23) pg iii. line 11 "could not provide.." should read "may not be able to provide.."
- (24) pg iii line 12. I am confused with the statement to connect Petersburg and Wrangell. At the recent FS meeting Mr. Morgan stated that he was not interested in connecting Petersburg and Wrangell.
- (25) pg iii. line 13. "provide no services" should read "may not provide services".
- (26) pg iii. line 18. "allow recreation access" should be changed to reflect the fact that the summit may be off-limits, either because of the structure itself may be on the summit or possibly fencing in the future would limit access to the area.
- (27) pg iii line 18. "as planned" should be revised to reflect the fact that the design and location of the trail will be effected by the placement of a communication site on the mountain.
- (28) pg iii. line 23. should include tanks, possible noise and smell of diesel.
- (29) pg. iii. line 28. size of area covered should include the areas also include the area covered by tanks, possible heli-pad, propane lines or power line buried or surface and associated trails to such associated equipment.
- (30) pg iii. line 30. Need more than hypothetical costs. These are totally irrelevant and meaningless. Costs to customers do not continue to increase in these proportions even if the cost to provider do.
- (31) pg iv. line 1. This section should include additional antennae, larger structure, microwave, possible fence, guy wire, repetitive heli-trips.
- (32) pg iv. line 4 & 5. Delete this sentence. Alternative 1 has nothing to do with a trail. The trail may or may not be there regardless.
- (33) pg iv. line 9. how large and of what type. Expound on this.
- (34) pg iv. line 13. should read "may leave some"

- (35) { pg iv. line 14. Irrelevant. Anyway a trail is desired/necessary NOT to increase use but to protect the fragile environment since CM is now getting so much use with the new access via Snake Ridge Road. } (35)
- (36) { pg iv. line 20. should read "may" be no.. (36)  
pg iv. line 27. I have questions re: "cannot". I have asked the FS to check with the folks who did the mapping what antennae increase would be necessary or what power would be necessary to allow Sumner to reach Petersburg at low power and to date have received no reply. As this site is so close to providing services I urge the FS to do testing of this site to make certain that Sumner would not be able to provide the desired services. } (37)
- (38) { pg iv. line 30. The cost of developing a site should not be of concern of the FS. } (38)

#### CHAPTER 1 PURPOSE AND NEED

- (39) { pg 1. line 16. CM can provide more economic base and social vitality for the future of the area by being kept in its present undisturbed state and henceforth a unique experience to visitors with resources that will become more and more valuable in the future. } (39)
- (40) { pg 2. line 35. It was reported before the Fall and the FS personnel had been aware that it was there long before this time. } (40)
- (41) { pg 2. line 42. Did this firm ever pay for this past use for all those years or were they fined for their trespass???
- (42) pg 3. line 8. add "at the request of the FS". (42)
- (43) pg 3. line 16. and to respond to all the other issues addressed in the Appeal." } (43)
- (44) { pg 4. line 9. In a conversation a couple of weeks ago Ron Humphrey FS SO said that the site had not been determined to be the summit and that the E summit was still a consideration , that the DEIS was just narrowing the area of site designation. Here it says that the facility will now be on the summit. After numerous helicopter trips by FS professionals and the permittee to CM to ascertain the best site they came up with the recommendation of the E summit site and the public agreed. Now the summit is now the site specified.? Please explain. } (44)
- (45) { pg 4 line 11. dissimilar adjectives. (45)  
pg 4 line 12 "cellular" used again. (46)
- (47) { pg 4 line 19. What areas are not reached from a designated site? (47)  
pg 4. line 41. power for microwave. possible diesel or power line. } (48)
- (49) { pg 5. picture. How come there are no propane tanks, popouts, generators, propane lines etc on this picture? } (49)
- (50) { pg 6. items listed. But which of these are areas or users that can not be reached by other designated sites. } (50)
- (51) { pg 6. line 24. Hikers would not be able to afford these services. } (51)
- (52) { pg 7. line 21. Crystal Mountains in a Special Uses area in most of the Alternatives in the new Revision and is included in such in the Preferred Alternative. } (52)
- (53) { pg 7. line 24. Communication sites are not permitted in a LUD III area UNTIL a designation had been made and UNTIL an amendment is made to the Forest Plan. } (53)

# C Appendix

- (54) pg 9. line 19. Most of these areas can be reached by designated sites.
- (55) pg 9. line 30. Desire does not equal "need". Most of these desires can be met by other sites and/ or not real "needs"
- (56) pg 9. line 36. Why can these person use Marine Radio or Alascomm.
- (57) pg 9. line 38 -42. Most of these services can and do use high power communications. This is misleading.
- (58) pg 10. all lines. Which of these are met by Crystal alone.
- (59) pg 10. line 22. Are these additive or included in the 20 small businesses? How come no number by some, others specific??
- (60) { pg 11. line 27. Why weren't these questionnaires sent to all NCC members and all local SEACC members?? Why only to all those who signed the permittee petition??
- (61) pg 12. line 37. What page?
- (62) pg 12. line 40. What about "displaced" persons?
- (63) pg 13. line 3-4. Here finally the FS states that it is not in a position to judge whether a proposal is uneconomical.

## CHAPTER 2 ALTERNATIVES

- (64) pg 1 line 6. Insert "may" continue..
- (65) pg 1 line 9. CMC could then request this to become a designated site.
- (66) pg 2. line 41+. Should include the recent information and timing of Motorola satellite plans from Larry's recent phone call.
- (67) pg 2. line 7. Again desire for services but most of these can be provided by other sites.
- (68) pg 4. Navy Peak. Wouldn't Navy Peak with Lindenburg provide line-of-site with Petersburg?
- (69) pg 5. Why is Sumner not included in sites not designated.?
- (70) a pg 7. line 28. Omit word "ever".
- (70) b pg 11 Add restrictions on possible fencing.

## CHAPTER 3 AFFECTED ENVIRONMENT

- (71) pg 2. line 1. Add operated "in trespass".
- (72) pg 2. line 2. Add applicant " was requested" to remove it.
- (73) pg 2. line 8. Add "year round". Also used in the Fall and Winter.
- (74) { pg 2. line 9. How can estimates run from 50 to 200 when one person has estimated to have seen 100 hikers on the "old" route alone?. The FS far under estimates the use.
- (75) a { pg 3. line 8. Winter use is not limited to helicopter alone. you can hike or snowshoe up, all depended on weather. Winter/spring use is not dependent upon Snake Ridge access.
- (75) b pg 3 line 6-7. Unclear how this fits into paragraph.
- (76) { pg 4. line 4. Many have expressed displeasure re: past site and a lot of the letters asked for its removal. Many hiked, not knowing it was there and were deeply disappointed to see the mess. To say otherwise is inaccurate supposition.
- (77) { pg 4. line 6-7. Omit last sentence. It has nothing to do with the issue. It is nowhere near the summit and totally unrelated and proves that the FS is "reaching" to justify their decision.
- (78) pg 4 line 8. Add "the only large contiguous area".

- 79 pg 4. line 20. Comment. How come the Horn Cliff site is so prominent. FS said had said no one will be able to see it. } 79  
 80 pg 5. line 17-19. Please expound on this . What is the next level and what would change the sensitivity level? } 80  
 81 pg 3. line 11. Crystal Mountain recreation improvements (trail) was in the last 5 year rec plan also. It should be so noted. } 81

#### CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

- 82 Why, since Recreation is such an important part of this decision was the chapter on Recreation an Appendix, an after thought so read by folks reading this DEIS?. I don't see how time is an excuse. Why was a "deadline" so important?? It was all published at the same time. } 82
- 83 Pg 2. line 13-15. Services to most of these users WOULD be provided by other sites or sources. } 83  
 84 pg 2. line 30. Use "may" not... } 84  
 85 pg 2. line 33. Summit may be "off-limits" } 85  
 86 pg 3. quotes. The "editorializing" is unnecessary and many of the comments are inaccurate. } 86  
 87 pg 3. line 16-21. This is all irrelevant. Its like saying you have to drive in a car to get there. The pipeline is only something you must rise above and there is nothing we can do about it. } 87  
 88 pg 3. line 45. Summit may be restricted or unobtainable because of site. } 88  
 89 pg 3. line 48-49. Strike this sentence. It appears to be an example of "reaching" by FS to excuse its decision. } 89  
 90 pg 4 line 13-15. States that this can't be seen but pg 5 line 6-7 says it would break the horizon. } 90  
 91 pg 7. line 2. What about tank storage? What about propane lines, probable power lines, diesel spills? } 91  
 92 pg 7. line 4-6. What about area covered by propane tanks, possible helipads, possible guy wires and multiple towers (they will cover more than a "few sq feet". The last site designation also had add ons to the site and "popouts". } 92  
 93 pg 7. line 15-17. The site designation is not limited to the permittee current proposal. Why address only his current proposal. Must look at the possible cumulative effect. } 93  
 94 pg 8. line 34-35. It is my understanding that CMC has not requested of ACE what the cost might be. This seems just a supposition. } 94  
 95 pp 8. User costs. The whole process (assumptions) used for user costs is based on false assumptions. A higher population center will not necessarily make better use of these facilities. Seems, given who he plans to serve, the opposite would be just as applicable. } 95  
 96 pg 10. The cost factors seems to be based on nothing reliable. Why 10 years? Where is the profit factor. It need not be tied in at the same rate as costs. The whole exercise is confusing and not supportable. } 96  
 97 pg 11. line 7-8. Add "the FS would not be able to deny this request". } 97

## C Appendix

- (99) pg 12. line 6-8. I thought that this was to be the route used by the proposed trail. Where then is the trail to be located.  
(100) pg 12. line 12. Strike "be tempted".  
(100) pg 12. line 30. insert "may" leave, delete "many".  
(101) pg 12. line 30-41. Again, where is the proposed trail?

### APPENDIX A RECREATION

- (102) pg 3 line 3. How can use bottom range be 0 when one person has estimated seeing 100 people per year on one route alone.  
(103) pg 3 line 4. Again the bottom range of 50 does not agree with 100 people on one route alone. Again the FS underestimates use.  
(104) { pg 3. line 15. Add that CM was also included in the last 5 year recreational plan and never implemented due to budget constraints.  
    pg 4. line 24-26. People would not be as likely to go to CM if it were littered with communication devices. This they can do at home. We have a wonderful unique opportunity here and to degrade this is unconscionable.  
(105) { pg 4. line 30-31. Where will these persons be "displaced" to.  
    pg 5. None of these sites are at all comparable nor offer a substitute.  
(106) { pg 6. line 26. How anyone can read this chapter on recreation and come up with the conclusion that the designation of CM as a communication site is compatible with the recreation on the mountain is unfathomable.  
(107) { pg 6. line 30. Substitutes are not available. This is stated in each the descriptions of various proposed sites on page 5.  
    None of these sites come close to offering the recreation experience currently offered by CM.  
(108) { pg 6. line 38. The location of the trail will be influenced heavily by the communication site.  
  
(110) { I continue to urge the FS to keep Crystal Mountain free from a Communication Site Designation and to provide it with protective status in the Revised Plan and to seek alternative site(s) for communication needs.

Thank you for this oportunity to comment.

Sincerely,

  
Beverly Richardson  
Box 1222 Petersburg, Alaska

# Letter From Beverly Richardson

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## Comment 1: (paraphrased)

Related to remand point 1, whether the decision adequately considers potential cumulative environmental effects:

The Draft EIS fails to adequately address the potential cumulative effects because the applicant is already asking for diesel generators, microwave, and powerlines in addition to his original request. This expansion also implies additional antenna towers, fencing, and heli-landings.

## Response 1:

We think we've described the cumulative effects of designation in the Draft EIS at a level of detail appropriate to the decision. The decision is not whether to permit a specific proposal, but whether Crystal Mountain is a place on which the Forest Service will consider applications for communication permits. The EIS documents the cumulative effects of designating or not designating Crystal Mountain as a communication site, including the possibility of a powerline, diesel generators, and microwave.

If Crystal Mountain were designated, the applicant's proposal and associated issues would be considered in detail in a second analysis. This approach is consistent with the Forest Service two-step decision making process, with Forest Plan decisions at the first level and project decisions at the second level.

Designation of a communication site is a Forest Plan decision. If the Regional Forester designates Crystal Mountain, his Record of Decision will amend the Forest Plan. Like all Forest Plan decisions, it would establish (1) program-level guidance for where certain activities would be allowed and (2) standards and guides to which any specific project must adhere. The details of the applicant's proposal would then be considered in the second analysis.

Unfortunately, the Forest Service may have clouded this distinction between Forest Plan program decisions and specific project decisions by describing the applicant's March 1991 proposal in the Draft EIS. The point was to give the reader some notion of what might occur on Crystal Mountain if it were designated. Unfortunately, this seems to have suggested to many people that the designation EIS would actually analyze the impact of *permitting a facility* on Crystal Mountain. In fact, it only analyzes the impact of *designating the summit* as a place where the Forest Service would consider applications for special communication use.

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## Comment 2:

### Related to remand point 2, whether viable alternatives exist:

"The maps clearly show that there are alternative sites and combination of sites that can meet the needs of people in the area.... The Forest Service is confusing the desire of the applicant with the needs of the area."

## Response 2:

The Draft EIS considers the two most reasonable, likely options to the applicant's request, Sumner and the combination of Lindenberg and Zarembo. In the Draft EIS they were treated as variations on the no-action theme; however, in hindsight we found this approach to be confusing. In the Final EIS, Sumner and Lindenberg/Zarembo have been described as alternatives in addition to the no-action alternative. We think this is an effective use of the coverage maps and a reasonable treatment of alternatives.

The maps show that the best single site alternative, Sumner Mountain, could not reach downtown Petersburg at low power levels. The maps also showed that the best two-site alternative, Lindenberg and Zarembo, could cover a land area slightly greater than Crystal while reaching a slightly smaller population base.

While it is true that a number of the sites already designated could, in combination, reach the same areas with which Crystal can communicate, they are all operated by single-use operators such as Alascom, the Federal Aviation Administration, the Forest Service, and the Coast Guard. The facility on Lindenberg is the only one that provides multi-user services. To make a number of sites work together as one, a developer would have to link all of them together. The Lindenberg/Zarembo combination is the simplest version of this option and it demonstrates the expense involved in making two sites act as one. By combining more than two sites, the cost would increase and reliability would continue to decline.

Your point about the difference between the desire of the applicant and the needs of the area is well taken. Our effort is directed toward the needs of the area. In the Draft EIS we have described how a number of people and sources have suggested that designation of Crystal Mountain would serve area needs. Hundreds of people signed a petition in favor of designation, many responded to scoping in favor of designation, and a number of people responded to the needs survey indicating they would like radio service in areas that can be reached from Crystal Mountain. The applicant's informal market tests also suggest interest in the services he is proposing. Similarly, many people responded against designation. The point is not to tally votes, but to demonstrate that designation would serve the needs of a larger portion of the community than a few individuals.

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**Comment 3:  
(paraphrased)****Related to remand point 2, whether viable alternatives exist:**

Other local competing firms are able to currently cover a lot of the areas that the maps show they are not able to cover. The Forest Service should allow the competing firm to continue to test its coverage of the area in question before allowing Crystal to be developed. On the ground testing should be conducted.

**Response 3:**

On-the-ground testing is extremely time consuming and expensive, and yields less reliable results than the computer generated maps from the National Telecommunications Information Agency (NTIA). It's true that other local firms may sometimes be able to reach specific points the NTIA maps say they cannot, with an intelligible transmission. The NTIA maps describe entire areas that can be reached consistently, with commercially reliable signal strength.

The only way to verify or disprove the NTIA maps is to send crews of technicians to every point on the maps at different times of the year, under the full variety of weather conditions, to measure the signal strength and reliability from each peak. Such an effort could entail years of testing. We think this would be an unwise use of personnel and funds because the maps already provide the information. NTIA is the national specialist in such information, providing information that resolves communication disputes involving the Federal Aviation Administration, the Federal Communications Commission, and the United States military. We think NTIA is the best we can do, even compared to the results we could get if we spent 1000 times the cost for on-the-ground testing.

We also think on-the-ground testing would be subject to the same disagreements directed at the maps today. Critics could fault research design and consistency of equipment calibration over the length of the study. On-the-ground testing is not foolproof even when practical for smaller applications. Note in response 3 to Eric Lee's letter that an equipment malfunction was the reason the White Alice development was located on the Duncal Canal site rather than on Crystal Mountain even though Crystal is a better site.

**Comment 4:****Related to remand point 2, whether viable alternatives exist:**

**'The maps show that the Sumner Mountain site would almost meet the applicant's need and comes within feet of covering the area desired.... ON THE GROUND TESTING SHOULD BE DONE FROM THIS SITE TO SEE IF IT CAN PROVIDE THE REQUIRED COVERAGE, GIVEN THAT THE MAPS SHOW ITS POTENTIAL COVERAGE IS SO CLOSE TO THAT DESIRED.'**

**Response 4:**

See response 3, Richardson letter, regarding on-the-ground testing.

The National Telecommunications Information Agency (NTIA) provided the analysis you requested and indicates the antenna on Sumner Mountain would have to be 10,000 feet high to reach Hungry Point. Hungry Point was chosen as the reference point assuming that if a signal from Crystal could reach Hungry Point, it could reach all of downtown Petersburg. Crystal Mountain was also tested and can reach Hungry Point at low power with a 20-foot antenna.

## C Appendix

### Comment 5:

**Related to remand point 2, whether viable alternatives exist:**

"The Forest Service should not be concerned if alternative sites are economically viable (the cheapest) to the permittee, only whether they can provide adequate necessary coverage."

### Response 5:

See response 2, paragraph 4, Richardson letter, regarding the cost to users. See responses 38 and 63, Richardson letter, regarding the desire of the Forest Service to see communication service provided to the communities and outlying areas.

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### Comment 6:

**Related to remand point 3, whether effects would be significant:**

"The Draft EIS does show that the effects would be significant."

### Response 6:

If the Forest Service approves an action with an Environmental Assessment (EA), there can be no significant effects. The presence of significant effects in an EA triggers the need to document effects in an EIS. If the agency approves an action with an EIS, significant effects may be allowed as long as the effects are displayed. The presence of significant effects in an EIS does not prevent or prohibit action.

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### Comment 7a:

**Related to remand point 4, whether mitigation measures are discussed adequately to conclude recreational and visual impacts would not be significant:**

"The Draft EIS states clearly that the impact to recreation would be significant but then concludes that the two uses are compatible. The information in the Draft EIS does not lead to this conclusion."

### Response 7a:

The Draft EIS describes the impacts on recreation but does not judge them to be significant or insignificant. Significance is important in EAs because it suggests that an EIS should be performed. See response 6, Richardson letter.

The Draft EIS describes that communication designation is compatible with recreation in the sense that recreation access would still be available, hiking and skiing will still be challenging experiences, and the view from the top will still be spectacular. It also acknowledges that some people may choose not to use Crystal Mountain anymore, and that some people who still use the mountain would enjoy it less (pp. 4-2, 4-3, A-3, A-4). See response 15, Richardson letter.

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### Comment 7b:

**Related to remand point 4, whether mitigation measures are discussed adequately to conclude recreational and visual impacts would not be significant:**

"The Draft EIS also states that visual impacts will be difficult to impossible to mitigate but then again dismisses this by saying that users will adapt or be displaced."

### Response 7b:

The purpose of an EIS is to display the consequences that would accompany each alternative. The Draft EIS does not dismiss this difficulty; it acknowledges that visual impacts cannot be mitigated very well if Alternative 1 were selected. We agree that very little can be done to mitigate the visual impact; however, the visual impact does not prevent recreationists from using the summit. "Visual impact" does not inherently translate to "incompatible use."

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**Comment 8:**

**Related to remand point 5, whether the analysis adequately examines the demand for an additional communication site:**

The Draft EIS does not distinguish which communication survey needs can be met by currently developed sites. The purpose of the "Communication Site Plan" should be to identify areas not able to be covered by currently designated sites. The Forest Service has failed to demonstrate that there are valid needs that will go unmet if the Crystal Mountain site is not developed.

**Response 8:**

In the Draft EIS, Chapter 1 described the areas of coverage requested by people in the Needs Survey, and Tables 2-1 and 2-2 compare the coverage that is possible with each alternative. By comparing the Needs Survey list with the tables of coverage, one can identify which of the needs can be met by each of the alternatives. For example, Sumner Mountain cannot communicate with Petersburg, so the six responses indicating desire to communicate with Petersburg would not be met.

It's true that we cannot say, for every use described in the EIS, the number of times a user's needs could still be addressed if Crystal were not designated. We don't know how many calls there might be for emergency medical service in Crystal's area of coverage that could not be met from another site. Nor can we say exactly how often outfitters and guides or utility companies will want to communicate between areas that Crystal can span and other sites cannot. It depends on the locale from which the request is made. In looking at potential sites for communication facilities, one would naturally look for areas that provide the greatest coverage of the target area from which calls might be placed. By describing the need for coverage and then comparing the coverage from different sites, we think we've addressed the "need for services." Then it is up to the decision maker to weigh the consequences and select an alternative.

The purpose of the Stikine Area-Wide Telecommunications Plan is to provide information that helps the Forest Service consider proposals for communication services. It is not intended to anticipate every potential communication need or application.

While it's true that a combination of many sites could provide coverage similar to that of Crystal, most sites are managed by single-use operators that do not offer multiple-user services (Alascom, Coast Guard, Forest Service, Federal Aviation Administration). Lindenberge Mountain is the only site from which multi-user services are offered at this time. In addition, the sites are not linked together to act as a single site. While it is hypothetically possible to link them, cost to users increases and reliability declines with each added site.

**Comment 9:**

**Related to remand point 5, whether the analysis adequately examines the demand for an additional communication site:**

"The Forest Service is also confusing the needs of the community and people with the desires of the permittee and a few select individuals."

**Response 9:**

See response 2, paragraph 4, Richardson letter.

## Comment 10:

**Related to remand point 6, whether the relative values of the resources have been analyzed and disclosed:**

"The Forest Service has not considered the value of Crystal Mountain in its present state in the cost equations. The value of Crystal as a prime undeveloped site far outweighs the value of it as a communication site.... This value of Crystal Mountain in its current state must be considered when discussing the cost of developing alternative sites."

## Response 10:

### **Value to Community**

Recreation and communication are both valuable to Rural Economic Development (RED) in the area. While people may disagree over which use is more valuable, the Forest Service thinks both uses can contribute to RED at the same time.

- Communications could allow new cottage industries to develop in remote areas as well as enhancing existing business and industry. This economic diversification would become more and more important if the timber industry in southeast Alaska follows the trend in the northwest United States.
- Once trail access is provided, Crystal could be marketed as a lure for recreation and tourism to the area. To date, the Forest Service doesn't know of any marketing effort that targets the existing setting of Crystal Mountain. One important aspect of marketing is targeting users or segments of the population. Crystal's existing condition appeals to one portion of the market segment while a change in the setting might appeal to another. The change in who would use Crystal Mountain, acknowledged in the Draft EIS, would need to be recognized in marketing and tourism efforts.

### **Value to Users**

This request is not as simple as establishing a single dollar amount as the user value and then multiplying times the number of users. Peoples' values vary. One recreationist may want to keep the summit natural at all costs while another might be willing to live with signs of human influence. The Draft EIS describes the recreation value to users of Crystal Mountain primarily in qualitative terms, including quotes, because the quantitative methods don't seem appropriate or helpful:

People can argue forever about cost methodologies and relative value factors, but the heart of the matter is differences in values. Arguing about equations would only prolong the decision-making process without clarifying issues or resolving differences. We think the value difference has already been laid out clearly in the Draft EIS.

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## Comment 11:

**Related to remand point 7, whether designation of Crystal Mountain as a communication site constitutes a significant amendment to the Forest Plan: "This would be a significant amendment."**

## Response 11:

According to the Forest Service Handbook, "Changes to the forest plan that are not significant can result from (1) actions that do not significantly alter the multiple-use goals and objectives for long-term land and resource management" (FSH 1922.51). Crystal Mountain is a LUD III area, with high amenity and high commodity values. The emphasis is on managing for uses and activities in a compatible and complementary manner to provide the greatest combination of benefits. This amendment would not change the Land Use designation status or the long-term land and management goals.

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**Comment 12:**

**Related to remand point 8, whether the analysis complies with Interim Directive #68 [now #90-3] of the Forest Service Manual:**

"The Forest Service has failed to show that there is a need to develop this site. There are clearly alternative sites that would cover the majority of the need of the area. The Forest Service is currently unwilling to do on the ground testing to ascertain whether areas that other individuals and firms say are possible are truly possible... THE FOREST SERVICE NEEDS TO CONDUCT TESTING."

**Response 12:**

See response 8, Richardson letter, regarding alternatives and the need to develop the site. See response 3, Richardson letter, regarding the suggestion to conduct testing.

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**Comment 13:**

"The Forest Service continues to confuse need with the permittee's desire."

**Response 13:**

See response 2, paragraph 4, Richardson letter.

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**Comment 14:**

**Related to remand point 9, whether designation and development to Crystal Mountain as a communication site is compatible with recreational use:**  
 "Everything in the Draft EIS leads one to believe that the two [uses] will be incompatible yet the Draft EIS concludes that they are compatible. This is illogical."

**Response 14:**

See responses 7a and 15, Richardson letter.

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**Comment 15:**

**Related to remand point 9, whether designation and development to Crystal Mountain as a communication site is compatible with recreational use:**  
 The following are examples that the two [uses] are incompatible:"

**Response 15:**

"The visuals are impossible to mitigate."

See response 7b, Richardson letter.

"There is no way to guarantee possible expansion at the site. There is everything to suggest that there will be future expansion. This is evidenced by the fact that the permittee is already expanding his potential facility."

Good point. While we have not received an expanded proposal, the applicant has expressed interest in a larger facility than originally proposed. Please note the limits described for each alternative in Chapter 2 of the Final EIS.

"There may be facilities on the summit, making the summit unobtainable."

The Forest Service will maintain recreation access to the summit. The summit area is spacious compared to some mountain peaks and provides physical space for facilities as well as recreational use.

"There may be fencing should problems occur."

See response 6 to the Baade letter.

"There may be diesel generators with inherent noise and smell and bulk and potential spills."

See response 1, Richardson letter.

"The trail may be rerouted."  
 The trail has not yet been designed or routed. Our use of the phrase "the trail could still be developed as planned" refers to the fact that development of a trail would not be precluded. The design of the trail with a communication site may or may not be different from the design of the trail without a communication site. It is not obvious to us how a communication site at the end of the trail would influence the route to the summit. There are far more difficult challenges in building a trail, including steep grades and muskeg, than a communication facility at the upper end of the route. As the Draft EIS says on page A-6, "Potential trail development in the area will need to consider communication site development and needs, but will not be hindered to a great degree by site designation."

"Persons will be 'displaced'."  
 See response 8, Baade letter.

"There are no alternative similar recreational opportunities in the area."  
 See response 8, Baade letter.

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## Comments 16, 46:

**Summary, page I, line 5; Chapter 1, page 4, line 12:** "This Draft EIS continues to use the word cellular phones. The permittee has stated repeated times that he does not plan to provide cellular phone but a radio phone that is cellular like."

## Response 16, 46:

Good point. We've changed the term to "radio phone."

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## Comment 17:

**Summary, page I, lines 22 & 23:** "The Draft EIS states that the survey demonstrates a 'desire' for services that can be provided by Crystal. The point should not be what can be provided by Crystal but what 'needs' can be provided only by a site on Crystal. Most of these desires can be provided by alternative sites."

## Response 17:

See response 8, Richardson letter.

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## Comment 18:

**Summary, page II, line 15:** "Insert the word 'both'."

## Response 18:

We think the meaning is clear without it.

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## Comment 19:

**Summary, page II, line 16:** "Define 'closest'."

## Response 19:

"Closest" means most similar.

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## Comment 20:

**Summary, page II:** "There should be a paragraph in the introduction describing the present and long term use of Crystal Mountain as a recreation site."

## Response 20:

This change has been made. Additional information is contained in Chapter 3 of the Final EIS.

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- Comment 21:** **Summary, page II, line 34:** "There are direct effects on Crystal Mountain. It can be permitted to be developed as a communication site as a consequence. Its land use is changed."
- Response 21:** You're right, designation will probably lead to development, but that likelihood is not the same thing as development. The designation itself would cause no direct, immediate change on the ground. It would simply say that the Crystal Summit is a site on which the Forest Service would consider an application for a communication permit.
- 
- Comments 22, 23, 25, 34, 36, 64, 84:** **Summary, page III, lines 10, 11, 13; Summary, page IV, line 20; Chapter 2, page 1, line 6; Chapter 4, page 2, line 30:** These comments all refer to the Draft EIS treatment of availability of services from Sumner Mountain and the Lindenberg/Zarembo combination. Where the Draft EIS describes "services that would not be provided," the commentor requests that the wording be changed to "may not be provided."
- Response 22, 23, 25, 34, 36, 64, 84:** Good point. The changes have been made.
- 
- Comment 24:** I am confused with the statement to connect Petersburg and Wrangell. At the recent Forest Service meeting Mr. Morgan stated that he was not interested in connecting Petersburg and Wrangell.
- Response 24:** **Summary, page III, line 12:** You're right. We've re-written the paragraph to clarify that the applicant's proposal depends on (1) reaching both markets from one peak and (2) connecting Petersburg and Wrangell to outlying areas.
- 
- Comment 26:** **Summary, page III, line 18:** "Allow recreation access' should be changed to reflect the fact that fencing or sheer size of development in the future would limit recreation access."
- Response 26:** See response 6, Baade letter; response 15, Richardson letter.
- 
- Comment 27:** **Summary, page III, line 18:** "as planned" should be revised to reflect the fact that the design and location of the trail will be affected by the placement of a communication site on the mountain."
- Response 27:** See response 15, Richardson letter.
-

## C Appendix

- Comment 28:** Summary, page III, line 18: "Should include tanks, possible noise and smell of diesel."
- Response 28:** See response 1, Richardson letter.  
In the Draft EIS, diesel is listed as one of the possibilities in the reasonably foreseeable future. It is addressed in the cumulative effects section rather than the section on indirect effects.
- 
- Comment 29:** Summary, page III, line 28: "The size of the area covered should include the areas covered by tanks, possible heli-pad, propane lines or power line buried or surface and associated trails to such associated equipment."
- Response 29:** Good point. We've changed this area to "a couple hundred square feet."
- 
- Comment 30:** Summary, page III, line 30: "Need more than hypothetical costs. These are totally irrelevant and meaningless. Costs to customers do not continue to increase in these proportions even if the costs to provider do."
- Response 30:** We think the assumption about passing development costs on to users is reasonable. It's true, there's no guarantee, but it seems a reasonable assumption that if a service costs more to produce the charge to users will also be higher. We think the hypothetical costs are relevant and useful for comparison purposes.
- 
- Comment 31:** Summary, page IV, line 1: "This section should include additional antenna, larger structure, microwave, possible fence, guy wire, repetitive heli-trips."
- Response 31:** See Chapter 2 of the Final EIS for a list of limits associated with each Alternative.
- 
- Comment 32:** Summary, page IV, lines 4 & 5: "Delete this sentence. Alternative 1 has nothing to do with a trail. The trail may or may not be there regardless."
- Response 32:** We think this sentence belongs where it is in the cumulative effects section. It doesn't matter that the trail is not associated with the designation question, the trail is a reasonably foreseeable future action that would have impact on Crystal Mountain, and NEPA regulations require that it be considered here. The National Environmental Policy Act (NEPA) regulations state that "cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions *regardless of what agency (Federal or non-Federal) or person undertakes such other actions* [emphasis added]. This means we must include reasonably foreseeable development regardless of whether it is related to or connected with the activities in question.
-

- Comment 33:** **Summary, page iv, line 9:** "How large and of what type. Expound on this."
- Response 33:** There is no expounding to do on the topic. Diesel facilities could not be installed without additional, site-specific permit analysis. See response 1, Richardson letter.
- 
- Comment 35:** **Summary, page iv, line 14:** "Irrelevant. Anyway a trail is desired/necessary NOT to increase use but to protect the fragile environment since Crystal Mountain is now getting so much use with the new access via Snake Ridge Road."
- Response 35:** See response 32, Richardson letter. Regardless of the reason for building a trail, its presence is likely to result in greater recreation use of Crystal Mountain.
- 
- Comment 37:** **Summary, page iv, line 27:** "I have questions re: 'cannot.' I have asked the Forest Service to check with the folks who did the mapping what antenna increase would be necessary or what power would be necessary to allow Sumner to reach Petersburg at low power."
- Response 37:** As described in response 4, Richardson letter, the antenna height would have to be 10,000 feet.
- 
- Comment 38:** **Summary, page iv, line 30:** "The cost of developing a site should not be of concern to the Forest Service."
- Response 38:** See response 2, paragraph 4, Richardson letter, regarding user costs. See response 63, Richardson letter, regarding the desire of the Forest Service to see communication services provided to the communities and outlying areas.
- The sentence you reference is part of the identification of the Forest Service preferred alternative, the only part of an EIS that should reflect judgement. While the EIS should be unbiased, the preferred alternative section is intended to indicate the judgement the agency is leaning toward. The Forest Service handbook specifically requires that decision makers identify items other than environmental impacts that influence the decision. Given that the Forest Service thinks the proposed service would benefit the community, cost is relevant if it means the difference between whether the services are likely to be offered.
- 
- Comment 39:  
(paraphrased)** **Chapter 1, page 1, line 16:** Crystal Mountain is more valuable to the rural economic development of the area as a recreation area than as a communication site, and it will only become more so in the future.
- Response 39:** See response 10, Richardson letter, *Value to Community*.
-

## C Appendix

**Comment 40:**  
(paraphrased)

**Chapter 1, page 2, line 35:** The trespass communication structure on Crystal Mountain was reported before the fall of 1989 and the Forest Service personnel had been aware that it was there long before this time.

**Response 40:**

District personnel report that they became aware of a trespass facility on Crystal Mountain during the summer of 1989. The Final EIS reflects this change.

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**Comment 41:**

**Chapter 1, page 2, line 42:** "Did this firm ever pay for this past use for all those years or were they fined for their trespass???"

**Response 41:**

No. The equipment was removed and the site was cleaned up at the owner's expense.

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**Comment 42:**

**Chapter 1, page 3, line 8:** 'Add 'at the request of the Forest Service'.'

**Response 42:**

This change has been made.

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**Comment 43:**

**Chapter 1, page 3, line 16:** "Add 'and to respond to all the other issues addressed in the appeal.'

**Response 43:**

In Chapter 1 of the Draft EIS, under "Sources of Guidance," page 8 describes the direction in the remand in greater detail. We think this is adequate.

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**Comment 44:**  
(paraphrased)

**Chapter 1, page 4, line 9:** The Draft EIS says that the communication facility will be located on the central summit even though the public, the applicant, and the Forest Service agreed to the east summit location last fall. Why is the central summit specified now?

**Response 44:**

The "proposed development" on pages 4 and 5 of Chapter 1 is a description of the applicant's current proposal to the Forest Service. His proposal was described in Chapter 1 so readers would have some notion of what is possible on Crystal Mountain if it is designated. Unfortunately, this may have given readers the impression that this EIS is intended to address the details of his application such as summit location. The decision to be made in this EIS is whether to designate an area on Crystal or Sumner Mountain as an appropriate place to accept application for communication use, or to recommend that the applicant apply for permits on the Lindenberg and Zarembo Sites. The analysis of location on any of the summits would be performed in a later, site-specific permit analysis.

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**Comment 45:**

**Chapter 1, page 4, line 11:** "Dissimilar adjectives."

**Response 45:**

The phrase "... capable of providing safety, commercial, and convenient communications..." has been changed to "... capable of providing safety communications, commercial communications, and convenience communications..."

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- Comment 47:** Chapter 1, page 4, line 19: "What areas are not reached from a designated site?"
- Response 47:** See response 8, Richardson letter.
- 
- Comment 48:** Chapter 1, page 4, line 41: "Power for microwave. Possible diesel or power line."
- Response 48:** Your comment refers to the applicant's proposal. The items you specified are not part of the proposal, though they are listed as reasonably foreseeable possibilities. See response 1, Richardson letter.
- 
- Comment 49:** Chapter 1, page 5, picture: "How come there are no propane tanks, popouts, generators, propane lines, etc on this picture?"
- Response 49:** We noticed the fuel tanks were missing too. They've been included in the Final EIS. The other items you mention might be included inside a shelter or are too small to show in scale.
- 
- Comment 50:** Chapter 1, page 6, Items listed: Which of the locations cannot be reached from existing sites?
- Response 50:** See response 8, Richardson letter.
- 
- Comment 51:** Chapter 1, page 6, line 24: "Hikers would not be able to afford these services."
- Response 51:** That's probably true. So changed.
- 
- Comment 52:** Chapter 1, page 7, line 21: "Crystal Mountain is in a Special Uses area in most of the alternatives in the new [Forest Plan] Revision and is included as such in the preferred alternative."
- Response 52:** You are referring to a description of the Land Use Designations (LUDs) in the current Forest Plan, which has no Special Interest Areas. This is the plan that will guide the Forest until the Revision is completed. See response 1, Baade letter.
- 
- Comment 53:** Chapter 1, page 7, line 24: "Communication sites are not permitted in a LUD III area UNTIL a designation had been made and UNTIL an amendment is made to the Forest Plan."
- Response 53:** In the Draft EIS, the decision to be made was, "Will Crystal Mountain be designated and incorporated into the Forest Plan as a communication site? (page 1-6). In other words, the EIS documents the analysis to support a decision whether or not to amend the Forest Plan. If a site is designated, then a specific proposal would be analyzed in a separate, site-specific analysis.

## C Appendix

**Comment 54:** Chapter 1, page 9, line 19: "Most of these areas can be reached by designated sites."

**Response 54:** See response 8, Richardson letter.

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**Comment 55:** Chapter 1, page 9, line 30: "Desire does not equal 'need.' Most of these desires can be met by other sites and/or not real 'needs.'

**Response 55:** It is not within the power of the Forest Service to look into the hearts of others and distinguish between their desires and their needs. The same services that might be considered frivolous by some people are considered crucial by others.

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**Comment 56:** Chapter 1, page 9, line 36: "Why can't these persons use Marine Radio or Alascomm?"

**Response 56:** Alascom service is limited to town-to-town coverage and is not available in outlying areas. Only licensed boats are authorized to use marine band radio and even for this use, channels are sometimes so congested it takes hours to place a call. A busy signal could mean an additional wait for a second chance.

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**Comment 57:** Chapter 1, page 9, line 38 - 42: "Most of these services can and do use high power communications. This is misleading."

**Response 57:** The portion of the list you are referring to does include mostly high power users; however, there are many low power uses described in the document as well. The proposal is for high and low power users, so we think it makes sense to describe both.

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**Comment 58:** (paraphrased) Chapter 1, page 10, all lines: Which of the uses on page 10 of Chapter 1 can be met by Crystal alone?

**Response 58:** See response 8, Richardson letter.

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**Comment 59:** Chapter 1, page 10, line 22: "Are these additive or included in the 20 small businesses? How come no number by some, others specific??"

**Response 59:** We've changed "20 small businesses" to "a number of small business," and "2 logging camps" to "logging camps."

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**Comment 60:**

**Chapter 1, page 11, line 27:** "Why weren't these questionnaires [communication needs surveys] sent to all Narrows Conservation Council (NCC) members and all local Southeast Alaska Conservation Coalition (SEACC) members?? Why only to all those who signed the permittee petition??"

**Response 60:**

The survey was conducted for the Stikine Area-Wide Telecommunications Plan and was sent to businesses, municipalities, utility companies, agencies, and others we thought might use or need communication services. It's possible that some of the people who signed the applicant's petition are also users of radio for some of their communication needs and as a result showed up on our mailing list. The petition you mention was not used to generate the mailing list for the needs survey.

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**Comment 61:**

**Chapter 1, page 12, line 37:** "What page?"

**Response 61:**

The sentence in question reads, "If Crystal Mountain is designated, mitigation will be addressed in the site development analysis." The 'site development analysis' refers to the second, site-specific analysis that would be conducted if Crystal Mountain were designated.

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**Comment 62:**

**Chapter 1, page 12, line 40:** "What about 'displaced' persons?"

**Response 62:**

See response 8, Baade letter.

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**Comment 63:**

**Chapter 1, page 13, lines 3 & 4:** "Here finally the Forest Service states that it is not in a position to judge whether a proposal is uneconomical."

**Response 63:**

The statement in question explains why "economic feasibility" was rejected as an issue to drive the analysis. The Forest Service is not obliged to insure that a developer turn a profit. The point is to distinguish between the needs of the developer and the needs of the community. The Forest Service is interested in seeing the communication needs of the community met. As a result, "economic feasibility" for the developer was rejected as an issue and replaced with "cost to communication users."

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**Comment 65:**

**Chapter 2, page 1, line 9:** "Crystal Mountain Communications could then request [Sumner Mountain] to become a designated communication site."

**Response 65:**

See response 4, Richardson letter.

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**Comment 66:**

**Chapter 2, page 2, line 41+:** "Should include the recent information and timing of Motorola satellite plans."

**Response 66:**

This has been done. See response 5, Baade letter.

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## C Appendix

- Comment 67:** Chapter 2, page 2, line 7: 'Again desire for services but most of these can be provided by other sites.'
- Response 67:** See response 8, Richardson letter.
- 
- Comment 68:** Chapter 2, page 4, Navy Peak: "Wouldn't Navy Peak with Lindenberg provide line-of-site with Petersburg?"
- Response 68:** We thought so at first, but a closer look revealed that Navy Peak doesn't talk to Lindenberg.
- 
- Comment 69:** Chapter 2, page 5: "Why is Sumner not included in sites not designated?"
- Response 69:** This list appears under the larger heading, "Alternatives Not Considered in Detail." Sumner was not included here because it was addressed as an alternative considered in detail.
- 
- Comment 70a:** Chapter 2, page 7, line 28: "Omit word 'ever'."
- Response 70a:** This change has been made.
- 
- Comment 70b:** Chapter 2, page 11: "Add restrictions on possible fencing."
- Response 70b:** See response 6, Baade letter, regarding fencing and limits in the Final EIS.
- 
- Comment 71:** Chapter 3, page 2, line 1: "Add operated 'in trespass'."
- Response 71:** This has been done.
- 
- Comment 72:** Chapter 3, page 2, line 2: "Add applicant 'was requested' to remove it."
- Response 72:** This change has been made.
- 
- Comment 73:** Chapter 3, page 2, line 8: "Add 'year round.' Also used in the Fall and Winter."
- Response 73:** This change has been made.
-

- Comment 74:** **Chapter 3, page 2, line 9:** "How can estimates run from 50 to 200 when one person has estimated to have seen 100 hikers on the 'old' route alone? The Forest Service far under-estimates the use."
- Response 74:** The hatchery operator estimated seeing 100 people depart from the hatchery annually and hike up the pipeline. We assumed that some of those people hiked all the way to the summit while others went only as far as the Crystal Lake or some destination short of the summit. We estimated the range to be from one-half that amount to twice that amount, which still seems reasonable to us.
- 
- Comment 75a:** **Chapter 3, page 3, line 8:** "Winter use is not limited to helicopter alone. You can hike or snowshoe up, all depended on weather. Winter/spring use is not dependent upon Snake Ridge access."
- Response 75a:** So changed.
- 
- Comment 75b:** **Chapter 2, page 3, lines 6 & 7:** "Unclear how this fits into paragraph."
- Response 75b:** The sentence on the trail from the hatchery to Crystal Lake has been moved one sentence earlier in the paragraph and the meaning is apparent.
- 
- Comment 76:** **Chapter 3, page 4, line 4:** "Many have expressed displeasure re: past site and a lot of the letters asked for its removal. Many hiked, not knowing it was there and were deeply disappointed to see the mess. To say otherwise is inaccurate supposition."
- Response 76:** You're right. We changed this paragraph to reflect your comment.
- 
- Comment 77:** **Chapter 3, page 4, lines 6 & 7:** "Omit last sentence [about the presence of the waterline from Crystal Lake]. It has nothing to do with the issue. It is nowhere near the summit and totally unrelated and proves that the FS is 'reaching' to justify their decision."
- Response 77:** In addition to the water supply pipeline, the experience already includes airplanes flying to and from Wrangell, roads, clearcuts, and barge traffic. These sights and sounds of human presence are part of the recreation experience whether one likes them or not. The point is that the presence of technology doesn't inherently destroy recreation even if it changes the experience. The presence of a communication facility would be another indication of human presence and it would change the recreational setting from *semi-primitive* to a more developed setting.
- 
- Comment 78:** **Chapter 3, page 4, line 8:** "Add 'the only large contiguous area.'"
- Response 78:** We think we have described the uniqueness of the area adequately.
-

## C Appendix

**Comment 79:**

**Chapter 3, page 4, line 20:** "Comment. How come the Horn Cliff site is so prominent? The Forest Service had said no one will be able to see it."

**Response 79:**

The Alascom repeater sits atop the Horn Cliffs and can be seen from Frederick Sound, Petersburg, and a variety of viewpoints. The Alascom repeater is approximately 30 feet tall by 60 feet wide and allows no light penetration. It is also covered with a dark green teflon fabric, which moves with the wind to shed snow. The Crystal Mountain proposal is smaller and less dominant as seen in the background distance. Whip-like antennas or even a wire tower allow light to penetrate and will not dominate views as seen in the background distance.

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**Comment 80:**

**Chapter 3, page 5, lines 17-19:** "Please expound on [the fact that Sensitivity Level 2 may no longer reflect current sensitivity of Crystal Mountain users.] What is the next level and what would change the sensitivity level?"

**Response 80:**

Sensitivity levels provide a method to measure the importance of viewed landscapes, and reflect concerns of persons viewing the landscapes. Sensitivity Level 1 areas are typically high-use roads or trails, the Alaska Marine Highway, tour ship routes, highly used marine travel routes, and campgrounds or developed recreation sites visited by persons with a high degree of concern for scenic quality. A Sensitivity Level 2 travel route or use area is one that doesn't fall into the Level 1 category but where there is still concern for visual quality. We think Crystal does not fit Sensitivity Level 1 unless or until, for example, (1) it is designated as a Special Interest Area, (2) it is marketed as a recreation destination, or (3) the trail is constructed. A change in the Sensitivity Level for an area would require Forest Supervisor approval.

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**Comment 81:**

**Chapter 3, page 3, line 11:** "Crystal Mountain recreation improvements (trail) was in the last 5 year rec plan also. It should be so noted."

**Response 81:**

That's true. So changed.

---

**Comment 82:**

**Chapter 4:** "Why, since Recreation is such an important part of this decision was the chapter on Recreation an Appendix, an after thought so read by folks reading this Draft EIS? I don't see how time is an excuse. Why was a 'deadline' so important?? It was all published at the same time."

**Response 82:**

As with any scheduling process, the Forest Service established a timeline for production of this EIS. At a certain point in preparation of the camera-ready copy, the document was "frozen," that is, no more changes were allowed in order to prepare the final formatting, page breaks, table of contents, and index. The appointment with the printer had been scheduled months in advance and was not easily changed. So when the detailed version of the recreation report was turned in late, we included it in an appendix, where it wouldn't change the page breaks or page numbers in the rest of the document.

We think it unfortunate that the report was placed in an appendix; however, we don't think the location seriously detracts from the Draft EIS. The recreation report has been integrated into chapters 3 and 4 in the Final EIS.

---

- Comment 83:** **Chapter 4, page 2, lines 13-15:** "Services to most of these users WOULD be provided by other sites or sources."
- Response 83:** See response 8, Richardson letter.
- 
- Comment 85:** **Chapter 4, page 2, line 33:** "Summit may be 'off limits.'
- Response 85:** See response 6, Baade letter.
- 
- Comment 86:** **Chapter 4, page 3, quotes:** 'The 'editorializing' is unnecessary and many of the comments are inaccurate.'
- Response 86:** We have removed the comments in question, not because they were inaccurate, but because the EIS should address designation issues rather than site-specific proposal issues. The site-specific issues will be addressed in a second analysis specific to the applicant's proposal.
- 
- Comment 87:** **Chapter 4, page 3, line 16-21:** "This is all irrelevant. Its like saying you have to drive in a car to get there. The pipeline is only something you must rise above and there is nothing we can do about it."
- Response 87:** See response 77, Richardson letter.  
The quote you reference is from a recreationist who believes a communication site at or near the summit is compatible with existing or future recreation uses of that mountain. While you may not agree with his comment, he has as much right to comment as anyone.
- 
- Comment 88:** **Chapter 4, page 3, line 45:** "Summit may be restricted or unobtainable because of site."
- Response 88:** See response 6, Baade letter.
- 
- Comment 89:** **Chapter 4, page 3, lines 48, 49:** "Strike this sentence [about the water pipeline being an example of the presence of technology that has not prevented recreation users from enjoying Crystal Mountain]. It appears to be an example of 'reaching' by the Forest Service to excuse its decision."
- Response 89:** See response 77.
-

## C Appendix

**Comment 90:** Chapter 4, page 4, lines 13-15: "States that [development] could not be seen but page 5 line 6-7 says it would break the horizon."

**Response 90:** The antennas and shelter would break the horizon but due to the distance from Crystal Mountain (4+ miles to Blind River Rapids, 6+ miles to Mitkof High, and 4+ miles to Wrangell Narrows), as well as the variety and foreground elements which hold the viewers attention, the impacts of the facility as seen in the background distance would be minimal.

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**Comment 91:** Chapter 4, page 7, line 2: "What about tank storage? What about propane lines, probably power lines, diesel spills?"

**Response 91:** See response 1, Richardson letter.

---

**Comment 92:** Chapter 4, page 7, lines 4-6: "What about area covered by propane tanks, possible helipads, possible guy wires and multiple towers (they will cover more than a 'few square feet'). The last site designation also had add ons to the site and 'popouts'."

**Response 92:** Good point. The Final EIS describes "a couple hundred square feet with no identifiable effects."

---

**Comment 93:** Chapter 4, page 7, lines 15-17: "The site designation is not limited to the permittee current proposal. Why address only his current proposal. Must look at the possible cumulative effect."

**Response 93:** You're right that the designation doesn't specifically address the applicant's proposal. His proposal has only been included to show the kind of development that might occur if Crystal is designated. A permittee could propose an expansion in the future, and someone else could propose another development if the first permittee could not meet their needs. See response 1, Richardson letter, regarding the difference between this Forest Plan Amendment and a site-specific project analysis.

The Draft EIS has already described the reasonably foreseeable actions and their possible cumulative effect on pages 10-13 of Chapter 4.

---

**Comment 94:** Chapter 4, page 8, lines 34, 35: "It is my understanding that Crystal Mountain Communications has not requested of Alaska Commercial Electronics what the cost might be [to rent facilities on Lindenberg Mountain]. This seems just a supposition [to say that full costs are anticipated on Lindenberg whether the applicant rented space from the Lindenberg site manager or built another facility]."

**Response 94:** The Forest Service thinks it is reasonable to assume that the permittee on Lindenberg would charge a rate related to the cost of providing the service, rather than charging less and losing money. In either case it would cost someone time and money to provide the facility.

---

**Comment 95:**

**Chapter 4, page 8, user costs:** "The whole process (assumptions) used for user costs is based on false assumptions. A higher population center will not necessarily make better use of these facilities. Seems, given who he plans to serve, the opposite would be just as applicable."

**Response 95:**

We think the assumptions are reasonable. See response 94, Richardson letter, regarding assumption about passing costs on to users. We included the potential service population because it was a way to account for the fact that some sites could reach more potential users than others. We included the population centers because communication between outlying areas and towns is a major part of the proposed service. Granted, no one would expect all 7000 people in Crystal's coverage to subscribe, but if, say ten percent of the population usually subscribes to such services, ten percent of 7000 represents more users than ten percent of a smaller population.

---

**Comment 96:**

**Chapter 4, page 10, user costs:** "The cost factors seem to be based on nothing reliable. Why 10 years? Where is the profit factor? It need not be tied in at the same rate as costs. The whole exercise is confusing and not supportable."

**Response 96:**

The cost factor was not intended to tie real costs to specific services. It simply shows that if the assumptions listed are true, services on Crystal Mountain would cost a little less than services on Sumner Mountain and considerably less than services on the Lindenberg/Zaremba combination.

- Ten years was chosen as an estimated life for the site investment based on technology and equipment becoming obsolete and depreciation of external components under severe weather conditions. This is comparable to the life expectancy of Forest Service communication facilities. Life expectancy of commercial facilities is actually five or six years.
  - You're right in saying the applicant could manage his profit factor differently than his costs imply. Sometimes stores sell products at less than cost to get new business. But the assumption still seems as reasonable as any other to us.
- 

**Comment 97:**

**Chapter 4, page 11, lines 7, 8:** "Add 'the Forest Service would not be able to deny this request [for a fence].'"

**Response 97:**

See response 6, Baade letter.

---

**Comment 98:**

**Chapter 4, page 12, lines 6-8:** "I thought [the Snake Ridge Road] was to be the route used by the proposed trail. Where then is the trail to be located?"

**Response 98:**

The Snake Ridge Road is the most likely route to the trailhead; however, the existing road surface has not yet been developed to a standard to which the Forest Service feels comfortable encouraging public use. The trailhead may or may not be at the upper end of the Snake Ridge Road. See response 15, Richardson letter.

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## C Appendix

**Comment 99:** Chapter 4, page 12, line 12: "Strike 'be tempted.'"

**Response 99:** This has been done.

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**Comment 100:** Chapter 4, page 12, line 30: "Insert 'may,' delete 'many.'"

**Response 100:** So changed.

---

**Comment 101:** Chapter 4, page 12, lines 30-41: "Again, where is the proposed trail?"

**Response 101:** See responses 15 and 98, Richardson letter.

---

**Comment 102:** Recreation Appendix, page 3, line 3: "How can the bottom range be 0 when one person has estimated seeing 100 people per year on one route alone?"

**Response 102:** We spoke with a number of people about how many people they thought went to Crystal Summit each year and their estimates ranged from 0 to 250. In other words, at least one person thought that no one really climbs to the summit. The Draft EIS goes on to explain that a range of 50 to 100 "seems fairly realistic." We've clarified this point in the Final EIS.

---

**Comment 103:** Recreation Appendix, page 3, line 4: "Again, the bottom range of 50 does not agree with 100 people on one route alone. Again the Forest Service underestimates use."

**Response 103:** See response 74, Richardson letter.

---

**Comment 104:** Recreation Appendix, page 3, line 15: "Add that Crystal Mountain was also included in the last 5 year recreational plan and never implemented due to budget constraints."

**Response 104:** That's true. So changed.

---

**Comment 105:** Recreation Appendix, page 4, lines 24-26: "People would not be as likely to go to Crystal Mountain if it were littered with communication devices. This they can do at home. We have a wonderful unique opportunity here and to degrade this is unconsciousable."

**Response 105:** See response 8, Baade letter; responses 7a and 15, Richardson letter.

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- Comment 106:** Recreation Appendix, page 4, lines 30, 31: "Where will these persons be 'displaced' to?"
- Response 106:** See response 8, Baade letter.
- 
- Comment 107:** Recreation Appendix, page 5: "None of these sites are at all comparable nor offer a substitute."
- Response 107:** True. See response 8, Baade letter.
- 
- Comment 108:** Recreation Appendix, page 6, line 26: "How anyone can read this chapter on recreation and come up with the conclusion that the designation of Crystal Mountain as a communication site is compatible with the recreation on the mountain is unfathomable."
- Response 108:** See responses 7a and 15, Richardson letter.
- 
- Comment 109:** Recreation Appendix, page 6, line 30: "Substitutes are not available. This is stated in each of the descriptions of various proposed sites on page A-5. None of these sites come close to offering the recreation experience currently offered by Crystal Mountain."
- Response 109:** True. See response 8, Baade letter; responses 7a and 15, Richardson letter.
- 
- Comment 110:** Recreation Appendix, page 6, line 38: "The location of the trail will be influenced heavily by the communication site."
- Response 110:** See response 15, Richardson letter.
- 
- Comment 111:** "I continue to urge the Forest Service to keep Crystal Mountain free from a Communication Site Designation and to provide it with protective status in the Revised [Forest] Plan and to seek alternative site(s) for communication needs."
- Response 111:** Thank you for your considerable effort in reviewing and commenting on the Draft EIS.
-

# C Appendix

P. O. Box 251  
Petersburg, Ak. 99833  
May 25, 1991

Michael A. Barton  
Regional Forester  
USFS Region 10  
P. O. Box 021628  
Juneau, Ak. 99802

Dear Mr. Barton:

After attending the last hearing here in Petersburg regarding the possible designation of Crystal Mountain as a communication site I came away more convinced than ever that Crystal Mountain should remain in its present natural state.

The communications experts who testified clearly stated how unpredictable the reception patterns are in this area. A computer program, which computes on the basis of predictability, should not be relied upon to accurately map the local reception patterns, or be used to base such an important decision on. It would be a great mistake to designate Crystal Mountain when other locations could possibly be entirely adequate. Harvey Gilliland, who has been in communications here for many years, gave an example of this kind of mistake happening in the decision-making process that resulted in the White Alice station being located where it was.

The communications industry is changing so rapidly that in a mere ten years or so the technology that requires a communication site on a mountain top will probably be obsolete. Bruce Morgan stated this in his testimony, as did two other local professionals in communications. How can you justify these short-term needs against

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MAY 29 1991

REGIONAL FORESTER  
FOREST SERVICE  
JUNEAU, ALASKA

## C Appendix

(4) } the long-term needs of a nation with so few areas like Crystal  
Mountain left?

(5) } The reason the Forest Service is in the position it is in  
is because it has continually bowed to the demands of private  
interests who want to make money from the resources that belong  
to all the public. The line of reasoning that the loss of one more  
natural area won't make that much difference has led us to the  
present situation where the loss of one more area does make a dif-  
ference, a big difference to all the people who need the type of  
experience Crystal Mountain has to offer.

(6) } As the ecologies in more developed areas of the nation collapse,  
the Crystal Mountain type experience will become priceless. Your  
statements in the New Perspectives video indicate to me that you  
know this is true.

(7) } At the hearing the possibility of a fence around the proposed  
site was raised because vandalism has happened to other communication  
sites recently. It follows that whoever won a bid for a site would  
soon cry vandalism so they could build a fence around their installation  
to protect their property. So we can presume a communication install-  
ation would have a fence around it.

(8) } What a drag that would be for the recreational users who have  
climbed the Crystal Mountain trail in anticipation of the rare ex-  
perience only such an area as Crystal Mountain can provide. The  
tourists of the future deserve better for their trip to the Last  
Frontier that they have spent their hard-earned free time and money on.

(9) } Logging and road building are the interests that will benefit  
from the improved communication offered by the Crystal Mountain site.

## Appendix C

The mandate of New Perspectives dictates that other uses of the land be given their rightful importance, and that long-term sustainability of the resources must be maintained. That Crystal Mountain be designated a communications site which would facilitate primarily the logging of the surrounding area, is definitely not in the spirit of New Perspectives.

Please consider these thoughts when making your decision on Crystal Mountain.

Sincerely,

Eric M. Lee

Eric M. Lee

P.S.: Enclosed is a clipping from this week's Petersburg Pilot. It is a letter to the editor written by a tourist who enjoys Crystal Mountain.

## Leave Crystal Mountain natural

To the Editor:

I have not yet made it to the top of Crystal Mountain, but I have spent many hours fishing in Blind River Rapids looking up at her snowy peak. I do not go to Alaska to look at satellite dishes and radio towers. There are plenty of those everywhere else.

Presently, I work on the Island of Gran Canaria, a well known European vacationland. The Canary Islands, like Southeast Alaska, forgot to stop building on its beaches and its

highest points. Now, one must go several hours to find those few isolated places where man has not built.

Some people feel at home in the cities, surrounded by buildings. Some people need more space. Gran Canaria has only one beach left, and the apathy of the majority gives me little hope that anyone coming here in a few years will find it. Mitkof has only one Crystal Mountain, and I thank the people who care enough to challenge this unnecessary equipment station. I still want to come back to Crystal Mountain, but not to see another satellite dish.

Sincerely,

Mark H. Jackson  
Las Palmas, Gran Canaria

## Letter From Eric Lee

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**Comment 1:** The NTIA computer program should not be relied on to accurately map local reception patterns.

**Response 1:** See response 3, Richardson letter.

---

**Comment 2:** "It would be a great mistake to designate Crystal Mountain when other locations could possibly be entirely adequate."

**Response 2:** We agree. That's why we looked into alternative possibilities so thoroughly. See response 2, Richardson letter.

---

**Comment 3:** "Harvey Gilliland, who has been in communications [in the Petersburg Area] for many years, gave an example of this kind of mistake happening in the decision-making process that resulted in the White Alice station being located where it was."

**Response 3:** It's true that mistakes happen. The mistake Mr. Gilliland described resulted from problems with equipment used for on-the-ground testing. He went on to explain that had the equipment been working properly, Crystal Mountain would have been selected for the White Alice development because it is a better site than Duncan Canal.

---

**Comment 4:** "The communications industry is changing so rapidly that in a mere ten years or so the technology that requires a communication site on a mountain top will probably be obsolete... How can you justify these short-term needs against the long-term needs of a nation with so few areas like Crystal Mountain left?"

**Response 4:** See response 5, Baade letter, regarding the timeline for satellite communications and the continuing need for ground stations once satellites are deployed. Communication and recreation needs are both long term.

Also see Chapter 2 regarding limits established for each alternative, including provision to restore the summit to its existing condition if facility becomes obsolete.

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## C Appendix

**Comment 5:**

"The reason the Forest Service is in the position it is in is because it has continually bowed to the demands of private interests who want to make money from the resources that belong to all the public."

**Response 5:**

The Forest Service has long been in the position of trying to serve the greater needs of "the public" and has found that the public is actually made up of many different publics with different desires. There is no simple choice. Your preferences are just as valid as anyone else's, no more and no less. The point here is that many people have strong feelings on both sides of this decision, and there is no simple, painless choice that would satisfy "all the public." There is a need for reliable communications and that is why we are considering this proposal.

---

**Comment 6:**

"The line of reasoning that the loss of one more natural area won't make that much difference has led us to the present situation where the loss of one more area does make a difference, a big difference to all the people who need the type of experience Crystal Mountain has to offer."

**Response 6:**

We recognize that in Alternative 1, the primitive aspect of the recreation experience will change; however, the area would not be "lost." See response 8, Baade letter; response 7a, Richardson letter. In addition, this is not an irreversible decision (see Chapter 2 of the Final EIS regarding limits and requirement that site be removed if no longer permitted or operated).

---

**Comment 7:**

"As the ecologies in more developed areas of the nation collapse, the Crystal Mountain type experience will become priceless. Your statements in the New Perspectives video indicate to me that you know this is true."

**Response 7:**

The mission of the Forest Service is to provide resources to meet the needs of society, and to protect those resources. This has not been changed by the New Perspectives approach. The New Perspectives video you've described does not suggest that there will no longer be consumptive use of resources. The point is to use resources in a way that involves the public and is sensitive to ecological processes.

---

**Comment 8:**

"...We can presume a communication installation would have a fence around it [given the desire to protect their property]."

**Response 8:**

See response 6, Baade letter, and see Chapter 2 of the Final EIS regarding limits that would prevent fencing.

---

**Comment 9:**

"... The tourists of the future deserve better for their trip to the Last Frontier that they have spent their hard-earned free time and money on."

**Response 9:**

The Forest Service will continue to provide an array of recreation opportunities for tourists and local residents in the future. Crystal Mountain will still be here for them to climb.

---

- Comment 10:** "Logging and road building are the interests that will benefit from the improved communication offered by the Crystal Mountain site."
- Response 10:** Logging and roading, along with rural residents, the fishing industry, emergency service agencies, and a variety of others described in Chapter 1 of the Draft EIS.
- 
- Comment 11:** "The mandate of New Perspectives dictates that other uses of the land be given their rightful importance, and that long-term sustainability of the resources must be maintained. That Crystal Mountain be designated a communications site which would facilitate primarily the logging of the surrounding area, is definitely not in the spirit of New Perspectives."
- Response 11:** New Perspectives is a new approach to balancing the variety of public demands of the National Forests. It doesn't mean "no more logging" and it doesn't mean there will no longer be development in rural areas. See response 7, Lee letter.
-

## C Appendix



# United States Department of the Interior

~~TAKE PRIDE IN AMERICA~~

OFFICE OF THE SECRETARY  
 Office of Environmental Affairs  
 1689 C Street, Room 119  
 Anchorage, Alaska 99501-5126

ER91-378

May 23, 1991

Mr. Mark Hummel, IDT Leader  
 USDA Forest Service  
 Alaska Region  
 Stikine Area  
 P.O. Box 309  
 Petersburg, Alaska 99833

Dear Mr. Hummel;

In response to your request, we have reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Crystal Mountain Communications Site Designation, Stikine Area, Tongass National Forest. We offer the following comments for your consideration:

General Comments:

There should be a description of mineral resources found in the area in Chapter 3- Affected Environment. This information is readily available from the Analysis of the Management Situation (1990) and Tongass Land Management Plan Revision, Draft Environmental Impact Statement (1991), both of which are cited elsewhere in the document.

We suggest the Statement be expanded to address the potential cumulative impacts on minerals resources, migratory birds, wildlife, their habitats, and recreation use. These impacts may result from designation of the site and any ensuing construction and operation of antennas, generators, and other facilities in the Crystal Mountain area.

We believe the Statement should also address actual project plans for what will be built and what mitigation measures will be used to avoid or lessen the impacts on migratory birds and wildlife that use the proposed areas.

Specific Comments:

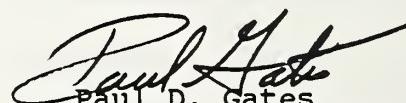
Chapter 1, page 12, paragraph 6- The DEIS states that "the Forest Service can make no promises about how the proposed designations may or may not be expanded at a later date." We suggest that all reasonably foreseeable future developments be identified and assessed so the cumulative impacts associated with this action can be described.

## C Appendix

- ⑤ } Chapter 3, page 6, paragraph 7- The entire Stikine area is a very important migratory corridor for birds, therefore, the DEIS needs additional documentation of passerine and waterfowl use of ponds near the project site. Birds and other wildlife that normally use the ponds near the summit of Crystal Mountain may be disturbed and displaced during construction and during periodic or emergency maintenance of electronic structures.
- ⑥ } If helicopters are used for access during construction of the site, they could disturb nesting bald eagles that may be in the vicinity. A survey of the area to identify any bald eagle nesting trees should be conducted prior to authorization of any activities. Timing windows and access routes to the site need to be identified to avoid this possible impact.
- ⑦ } Migratory waterfowl that use Crystal Lake and the nearby ponds during spring and fall could collide with antennas or other tall structures. Mitigation for these potential impacts need to be addressed in the final Statement.

We appreciate the opportunity to review the draft document.

Sincerely,

  
PAUL D. GATES  
Regional Environmental Officer - Alaska

# Letter From Paul D. Gates, U.S. Department of the Interior

**Comment 1:**

"There should be a description of mineral resources found in the area in Chapter 3 -- Affected Environment."

**Response 1:**

We have no reason to believe there are valuable mineral resources on or under Crystal Mountain. The issue was not raised in the scoping process, nor has anyone provided information to suggest such analysis is warranted. Designation of Crystal Mountain as a communication site would not preclude the possibility of future minerals development.

**Comment 2:**

"We suggest the Statement be expanded to address the potential cumulative impacts on minerals resources, migratory birds, wildlife, their habitats, and recreation use."

**Response 2:**

The Draft EIS already describes potential cumulative impacts on wildlife, habitat, and recreation use. These sections have been expanded in the Final EIS.  
See response 1, Gates letter, regarding minerals resources.

**Comment 3:**

"We believe the Statement should also address actual project plans for what will be built and what mitigation measures will be used to avoid or lessen the impacts on migratory birds and wildlife that use the proposed areas."

**Response 3:**

This Forest Plan Amendment is a program-level land allocation, not a site-specific analysis. See response 1, Richardson letter, regarding the difference between these two levels of planning. Also see Chapter 2 of the Final EIS regarding limits to development in the final EIS.

**Comment 4:**

**Chapter 1, page 12, paragraph 6:** 'The Draft EIS states that 'the Forest Service can make no promises about how the proposed designations may or may not be expanded at a later date.' We suggest that all reasonably foreseeable future developments be identified and assessed so the cumulative impacts associated with this action can be described."

**Response 4:**

The Forest Service has already described reasonably foreseeable development and cumulative effects in Chapter 4, pages 10-13. See response 1, Richardson letter. Also see Chapter 2 in the Final EIS regarding limits to development associated with each alternative.

## C Appendix

**Comment 5:**

"The entire Stikine area is a very important migratory corridor for birds, therefore, the Draft EIS needs additional documentation of passerine and waterfowl use of ponds near the project site. Birds and other wildlife that normally use the ponds near the summit of Crystal Mountain may be disturbed and displaced during construction and during periodic or emergency maintenance of electronic structures."

**Response 5:**

Impact to birds has been addressed in more detail in the Final EIS. See Chapter 2 of the Final EIS for limits that include the requirement that ponds not be covered or otherwise obstructed.

---

**Comment 6:**

"If helicopters are used for access during construction of the site, they could disturb nesting bald eagles that may be in the vicinity. A survey of the area to identify any bald eagle nesting trees should be conducted prior to authorization of any activities. Timing windows and access routes to the site need to be identified to avoid this possible impact."

**Response 6:**

The proposed designation poses no threat to nesting bald eagles. Eagles nest at much lower elevations, near the coast or other large bodies of water. No suitable eagle nesting habitat exists near the proposed construction site.

---

**Comment 7:**

"Migratory waterfowl that use Crystal Lake and the nearby ponds during spring and fall could collide with antennas or other tall structures. Mitigation for these potential impacts need to be addressed in the final Statement."

**Response 7:**

See Chapter 2 of the Final EIS regarding limits to development. Mitigation would be addressed in a site-specific permit analysis, not in this amendment to the Forest Plan. See response 1, Richardson letter.

---

POBox 1852  
Wrangell, AK 99929  
May 29, 1991

US Forest Service  
POBox 309  
Petersburg, AK 99833

Dear Mark Hummel:

I am writing to give comment on the Draft Environmental Statement for Crystal Mountain Site Designation. I believe that the proposed communication facility should not be allowed on Crystal Mountain. The area is a high use recreation area and I feel that the structures would detract from the optimum recreation experience. The idea of climbing a mountain to face structures is not appealing at all. Vandalism is likely, making a fence necessary. This would be even more of a detriment.

People do not live in Petersburg or Wrangell if they want to live in a high technology, fast paced place where a cellular phone is necessary. Our recreation experience should not be ruined so that a few people could use cellular phones. Please find the enclosed article from Discover magazine, Jan. 1991. It describes a plan Motorola has undertaken to cover the planet with 77 satellites. These satellites would replace the proposed communication ~~facilities~~ facilities.

I take issue to the information provided on the costs of subscribing

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- 2 -

- ⑤ } to said services. I realize that the purpose was to compare  
the cost of the alternative sites to the proposed site. However,  
at the costs suggested I highly doubt that there would be  
very many subscribers. I do not feel that the benefits for a  
few would outweigh the detriment to many.

thank you.

Sincerely,

Paula Rak

Paula Rak

## LONG, LONG DISTANCE

There's an old joke about a Russian man walking down a street carrying a suitcase in one hand and wearing a brand-new watch on the other. A passerby stops to admire the watch, commenting on its craftsmanship. "Yes," says the proud owner, "it's a wonderful example of Soviet technology."

"And what," asks the other man, "is in the suitcase?"

"Oh," says the first man. "That's the battery."

For owners of cellular phones the joke is not so funny. While the cellular revolution has freed busy executives from their desks, it has also shackled them to bulky handsets, separate component boxes, and oversize battery packs. This past year, however, all that began to change as more and more consumers made the acquaintance of the truly portable cellular telephone—a piece of communications hardware that can be carried like a wallet.

The portable telephone revolution was a long time coming. But over the past four years ten electronics companies—including Fujitsu, Hitachi, JVC, Mitsubishi, Mobira, and Nokia-Tandy—introduced their own versions of the personal telephone. Most of the devices weigh under a pound and a half and are small enough to fit in a breast pocket. One of the lightest and most compact is Motorola's \$2,495 Micro TAC, about the size of a blackboard eraser and weighing under 11 ounces.

"The secret of the phone," says Ray Millington, Motorola operations manager, "is in miniaturizing components like the battery, antenna, and filters, and then packing them more densely within the phone itself."

Of course, the drawback of all cellular phones is that they work only if you live in one of the 306 cities or 70 rural areas that offer cellular service. That leaves more than half the United States uncovered. Motorola, however, may have the problem solved.

In June the company announced plans to launch a flock of 77 low-orbiting satellites able to relay cellular signals to the entire globe. The ambitious undertaking—scheduled to get under way in 1994—is dubbed Iridium, after the 77 electrons in the iridium atom. The Iridium satellites will circle the planet in seven polar orbits, each of which will contain 11 satellites.

"In an ordinary cellular system," says Jim Foley, a business manager with Motorola's satellite communications depart-

from 20 to 77 launches to get all the satellites into orbit, depending upon whether boosters capable of carrying more than one satellite are used. Once launches begin, the system will not be fully operational for at least two years.

Even as Motorola was planning its Iridium system, another telephonic innovation was getting off the ground. In May the Federal Communications Commission awarded a preliminary license to the New York company Millicom, allowing it to experiment with wireless microwave phone systems that would shrink the size of a telephone cell dramatically; each cellular transmitter would

cover an area as small as a single floor of a single office building and would be able to handle calls from about 50 phones.

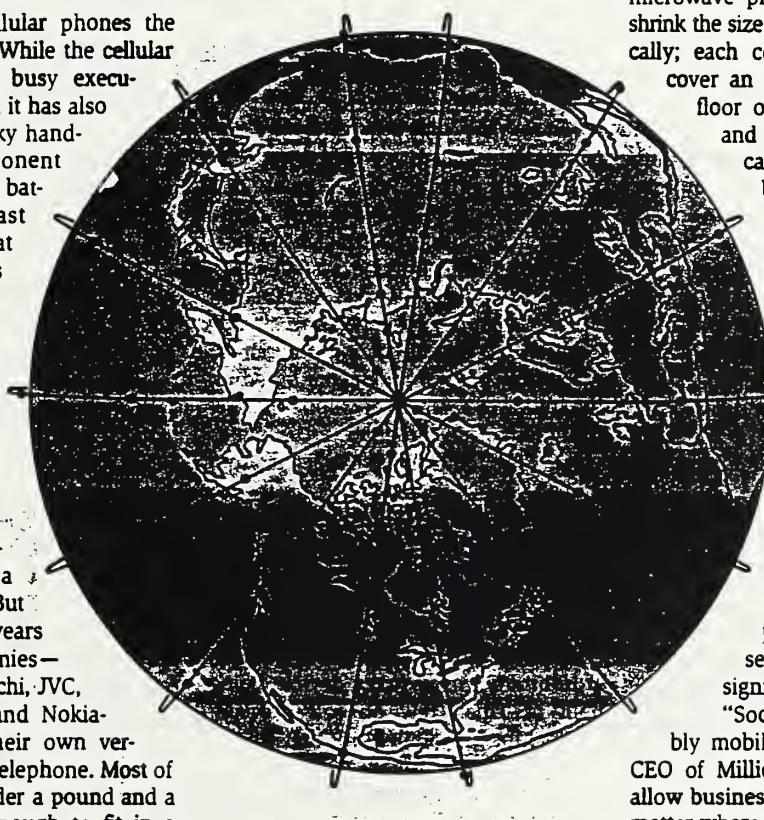
Users would carry lightweight cordless handsets that would rely on a low-power transmitter the size of a filing cabinet. There could be just one transmitter in one building or hundreds of transmitters across the city in hundreds of buildings, allowing communications between buildings or within the same building. The system's relatively low power means smaller handsets, longer battery life, and significantly lower price.

"Society is becoming incredibly mobile," says J. Shelby Bryan, CEO of Millicom. "These phones will allow businesspeople to do business no matter where they are."

Of course, as big a boon as all these systems can be, they have some decided drawbacks. Even people within the industry concede that the appearance of more and more communications hardware could ultimately mean the disappearance of something even more important: privacy.

"The telephone is becoming ubiquitous," says Bryan. "There's no doubt this will have a substantial sociological impact—an impact that may make some people uncomfortable. Of course, for those people there is always an option: they can simply turn their personal phone off."

—Dan Gutman



**Motorola announced plans to place 77 satellites in seven polar orbits. The flock of orbiters will provide cellular telephone service to the entire globe.**

ment, "numerous transmitters provide service by covering individual regions, or cells, within a city. The user then travels through the city moving from cell to cell. With the Iridium system the satellites move in a polar orbit as Earth rotates below. The number and configuration of the satellites guarantees that no area on the globe will ever be without service."

Motorola says it will take anywhere

# C Appendix

## Letter From Paula Rak

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**Comment 1:**

"I believe the proposed communication facility should not be allowed on Crystal Mountain. The area is a high use recreation area and I feel that the structures would detract from the optimum recreation experience. The idea of climbing a mountain to face structures is not appealing at all."

**Response 1:**

See response 8, Baade letter.

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**Comment 2:**

"Vandalism is likely, making a fence necessary. This would be even more of a detriment."

**Response 2:**

See response 6, Baade letter.

---

**Comment 3:**

"People do not live in Petersburg or Wrangell if they want to live in a high technology, fast paced place where a cellular phone is necessary. Our recreation experience should not be ruined so that a few people could use cellular phones."

**Response 3:**

People live in Petersburg and Wrangell for many different reasons and some of those people want additional communication services. The Draft EIS acknowledges that a change in the recreation experience would disappoint some people.

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**Comment 4:**

"Please find the enclosed article from Discover magazine, January 1991. It describes a plan Motorola has undertaken to cover the planet with 77 satellites. These satellites would replace the proposed communication facilities."

**Response 4:**

See response 5, Baade letter.

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**Comment 5:**

"I take issue to the information provided on the costs of subscribing to said services. I realize that the purpose was to compare the cost of the alternative sites to the proposed site. However, at the costs suggested I highly doubt that there would be very many subscribers."

**Response 5:**

The example we used, \$320, \$350, and \$810, displayed what the difference in user cost might be for a hypothetical service from each site. The example could just as easily have been \$32, \$35, and \$81. The cost factor is not intended to tie real costs to specific services. It simply shows that if the assumptions listed are true, any given service on Crystal Mountain would cost a little less than the same service on Sumner Mountain and considerably less than the same service on the Lindenberg/Zarembo combination.

See response 1, Chittenden letter, regarding a mistake in the calculations that has been corrected in the Final EIS. The factor for Crystal Mountain is 2.6 rather than 3.2

See Chapter 2 of the Final EIS regarding limits to development and requirement that site be returned to original state if facility becomes obsolete.

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**Comment 6:**

"I do not feel that the benefits for a few would outweigh the detriment to many."

**Response 6:**

It seems to us we're talking about benefits for many people in the community, as described in Chapter 1.

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received 6-3-91

May 31,

Box 262

Petersburg

To Mark Hammel, U.S.F.S.,

I am writing concerning the Crystal Mountain Communications Site controversy. I was troubled after a news interview with you to hear that it may be possible for the venture to require, or acquire, a fence around the site to protect it from vandalism. This in itself sounds reasonable, but I seem to remember most participants at meetings stating that the least amount of impact is preferred, and a fence would be abhorred by hikers to the top. I also recall great deliberation & requested feedback from the group about site location, & everyone but Mr. Morgan preferring a non-summit location. It seems that he is again planning a summit site now, however. The entire project

- ③ } seems to be snowballing in size  
as he is now talking of  
"microwaves" and electrical lines  
to the top. As I understand it,  
the U.S.F.S. plans to grant the  
communication site & then  
place restrictions on Mr. Morgan  
& work out specifics. It seems  
to me that this is a reversal  
of logical order and all proposals  
and restrictions should be made  
before the license is granted.  
Also, if there is any variation  
from the original EIS then  
another should be conducted to  
encompass the new changes.
- ④ } A last question: Why does the U.S.F.S.  
seem to be working so hard to  
accommodate Mr. Morgan's demands  
when there is an operational communi-  
cations site on Lindenburg whose  
owners say covers pretty much the  
same area? Thank you for your time.  
Beth Flor

## Letter From Beth Flor

---

**Comment 1:**

"I was troubled after a news interview with you to hear that it may be possible for the venture to require, or acquire, a fence around the site to protect it from vandalism. This in itself sounds reasonable, but I seem to remember most participants at meetings stating that the least amount of impact is preferred, and a fence would be abhorred by hikers to the top."

**Response 1:**

See response 6, Baade letter.

---

**Comment 2:**

"I also recall great deliberation and requested feedback from the group about site location, and everyone but Mr. Morgan preferring a non-summit location. It seems that he is again planning a summit site now, however."

**Response 2:**

See response 44, Richardson letter.

---

**Comment 3:**

"The entire project seems to be snowballing in size as he is now talking of 'microwaves' and electrical lines to the top."

**Response 3:**

See Chapter 2 of the Final EIS regarding limits to development. Also see response 1, Richardson letter, regarding the difference between this Forest Plan Amendment and a second, site-specific permit analysis.

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**Comment 4:**

"As I understand it, the Forest Service plans to grant the communication site and then place restrictions on Mr. Morgan and work out specifics. It seems to me that this is a reversal of logical order and all proposals and restrictions should be made before the license is granted."

**Response 4:**

See response 1, Richardson letter.

---

**Comment 5:**

"Also, if there is any variation from the original EIS then another should be conducted to encompass the new changes."

**Response 5:**

There has been no change in the applicant's proposal; however, this EIS is not analyzing or authorizing the applicant's proposal. See response 1, Richardson letter.

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## **C Appendix**

**Comment 6:**

"Why does the Forest Service seem to be working so hard to accommodate Mr. Morgan's demands when there is an operational communications site on Lindenberg whose owners say covers pretty much the same area?"

**Response 6:**

We think the Draft EIS displays that Crystal Mountain could serve a number of areas that Lindenberg cannot reach, as described in response 8, Richardson letter; as shown in the NTIA maps; and as identified in the Draft EIS.

---

received 6-3-91

P.O. Box 1727  
Petersburg AK 99833  
May 31, 1991

Mark Hummel, Team Leader

Stikine Area

Tongass Nat'l Forest

P.O. Box 309

Petersburg AK 99833

Dear Mark

Re: Crystal Mt. DEIS

Oh Crystal Mountain, her lovely head  
Is in great danger, your EIS said.  
The preferred alternative is to place  
A wretched wart right on her face.

But Crystal's a place to which we relate.  
And we don't believe you can mitigate  
You just want to change her altitude  
And for people like us to change our attitude

But for a lot of us there's a different call  
Than an easily placed cellular phone call

Alaska's gone where it becomes a place  
Where one can't escape the human race.

A frontier vanquished is an irretrievable loss  
In man's vain effort to show who's boss  
So I urge you now to change your tone  
Forget the lure of one more phone.

Leave Crystal's top to those who want to climb  
To majestic places, to dream and rhyme,  
Or heal the soul from a too fast pace  
Please don't defile our Crystal, don't mar her face.

Sincerely

Don Cornelius

Karen Cornelius

## Poem From Don and Karen Cornelius

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**Response:**

Thanks for your comments.

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## C Appendix

Received 6-3-91

## Comment on Draft EIS - Crystal Mountain

The Crystal Mountain Draft EIS appears biased in many ways and seems to be trying to justify a decision already made.

The most blatant sign of biased reporting is that Recreation is listed as an appendix to the document. Recreation and the question of incompatibility with a major communication site is a main concern of many users of Crystal Mountain and the reason for conflict on this issue. To have it listed as an appendix is totally absurd. The Forest Service has spent an exorbitant amount of time and money putting together fancy maps, questionable cost figures and has worked closely with the applicant on site specifications, yet recreation appears to have been an after-thought of the analysis.

Other examples of biased reporting include:

— The F.S. has relied extensively on the applicant for cost and user figures. Talking with other communication ~~firms~~ firms (AEC), they feel the costs listed are not realistic, but are too high.<sup>(3)</sup> I would like to see an unbiased analysis given for the development and service costs.

— The F.S. has editorialized comments given by recreationalists. (Chap 4, page 3) The F.S. implies that no fences are proposed ~~and~~ and that the generators used will be "quiet".<sup>(4)</sup>

- (4) However, elsewhere in the document, the F.S. has admitted that fences could be a possibility if vandals occur, and that diesel generators are a possibility. The FS. also likes to point out (Chapter 4, page 3) (Chapter 3, page 4) that the small communication structure that was on the summit May '86 - August '90, did not prevent people from climbing the mountain or enjoying the experience and that the waterline does not prevent enjoyment of the experience - however, the small structure previously up there is a far cry from what is being proposed. Also, the shelter and garbage up there earlier was a disturbing site, ~~which attracts~~ to ~~too many people~~ upon reaching the summit - many of who didn't know it was there until they reached the sum. Such a communication site that is being proposed and the foreseeable future development, is a major intrusion to a recreation experience.
- (5)

- (6)
- (7)
- (8)
- Communication Needs Survey - F.S. has spent a lot of time and money on this survey, ~~but~~ yet there is not an equal ~~recreational~~ survey for recreation needs. A brief mention is made of the 5 year ree-plan and the importance of Crystal Mountain. ~~any~~ I feel the recreational foresters report of 1/19/90, which was part of the original IDT report gave a good perspective of the ~~recreation~~ recreation needs and values in the Crystal Mountain area. In the final, I would like to see mention of the management concern for the potential of Blind Slough / Crystal

Mountain complex to be designated a Special Area during the TRMP revision. As Brad Hunter's report states "Such a designation would most likely limit commercial development within the management area." Wait for TRMP!

I would also like to see some mention made of the history of local citizens interest in preserving recreation values of the area. I would also like included ~~next~~ recreation needs anticipated for next 10-15 years. Such areas as Crystal will become even more valuable, as such recreational opportunities decrease elsewhere.

#### Other comments -

Chapter 1, page 7- when relying on LWD's one must remember that their classifications are now being modified into smaller areas. Again, Crystal has potential to be part of a special area. Management is suppose to consider ~~the~~ direction that may be part of the TRMP revision. Also, due to the constraints of original LWD's and the fact they encompassed complete watersheds, Crystal was precluded from a more protective status.

Pg. 8- Communication Site Analysis - While it is true that it is impossible to test every patch of ground, if an operable site is said to consistently and reliably hit a "critical" area, on the ground testing should be done. Lindenau Peak should be allowed to show what it can hit in reality. Also, if any other peaks appear

(12)

to give a reasonable indication that they would work, actual field testing should be conducted. I would like to see testing done from Lidenburg and Sumner.

(13)

Communication Needs Survey Pg 9 Chap 1 - the survey shows people are interested in such a service. However, the F.S. has failed to analyze how these "needs" could be served by other means or existing sites. What about Deascom, marine operators, Navy Peak, Linden Peak, a microwave system rumoured to be coming to Southeast? At there is no indication of what these potential users would be willing to pay, or what costs the market could bear.

(14)

Maybe there wouldn't be enough people willing to pay the price, and a development wouldn't be economically feasible. Also, I feel ~~the value~~ saving a business <sup>man</sup> a trip to town to make a call, or allowing a vacationing business man to maintain contact with a home office no where nears ~~the recreation area~~ ~~such as~~ ~~such as~~ the value ~~the~~ of Crystal Mountain as a recreation area for locals and visitors! ~~these other people are all the marine operators don't be ridiculous~~ How ridiculous! Others can use the marine operator!

(15)

All 'needs' and scoping surveys should be taken with a grain of salt. When looking over the returned surveys, it was obvious that one person had filled out at least 5 of the surveys, and handed them around to be signed. The "one" person was another communication firm.

other comments -

Chap 1 Pg. 12. I feel some mitigation measures should be addressed in EIS for site designation. Since ~~is~~ a big question is site compatibility with recreation, some site specifics are needed. A small communication shell with a small fin would be considered tolerable, compatible to a recreation site by some. However, large towers, propane platforms and tanks, powerlines, microwaves etc, would not be considered ~~compatib~~ compatible. Whether a specific site would be compatible or not, should effect the designation decision. Designating Crystal would have cumulative effects and impacts and these must be looked at in designation EIS. The F.S. is not suppose to break a project down into smaller components. Mitigation measures were mentioned in the original EA, why not this Draft EIS?

Chap 1 pg 4 - In a 1990 public meeting for mitigation measures, it was concluded an east Summit facility would be preferred over a central Summit. Why is it now back to central Summit? People enter into good faith discussions, compromises only to have them ignored.

Chap 2 Pg 10 -

- (21) { Site to be designated was originally  $\frac{1}{4}$  acre in size. Why is it now 1 acre?
- (22) { Chap 2 pg 22 - compatibility with recreation use - access could change if a fence was put up, or if access to summit was impossible due to location of structure.

- (23) { Chap 3 Pg 2 How can estimate be 50-200, or 0-250 (Appendix A Pg. 3) when hatchery manager sees 100 from that side alone.
- (24) { Pg. 3 Winter access is often by hiking, skiing snowshoeing - not helicopter.

- (25) { Pgs 5 - "Sensitivity Level 2 rating may no longer reflect current sensitivity of Crystal Mtn. users" - What would be the new level, and how would it effect visual quality objectives?

Chap 4

- (26) { Pg 2 - Access of low power radio users is the concern, the F.S. should consider by what other means their "needs" could be met - Alaskan Lindenburg marine operator, etc. Having to wait for a marine operator, is a small price to pay, when one considers the value of Crystal Mountain as a communication site.
- (27) { Pg 2. Access would not remain the same if summit was unobtainable due to fences, a location of facility.

Cost to Users (Chapt 4 Pg 9-10) The "hypothetical" comparison of each alternative based on a number of assumptions is meaningless and useless. The population figures used to determine user cost factor do not make sense to me. To get the total population covered by low+high power, are you adding Warrick + Pittsburgh ~~is~~ and surrounding area? Most people in these areas will not be requiring such a service offered by this communication site. This is important since it figures into the formula for user cost factor. You need to look at some reasonable, user numbers for each alternative you are going to consider ~~that~~ to be part of user cost. This user cost factor based on hypothetical situation is irrelevant.

Have an economist look at this one again.

Population in these included areas could be covered by other offered services - AT&T, Longdistance, Navy P.C., Marine operator, etc.

No analysis on a yearly hook-up cost, monthly or yearly cost per user was included in this analysis. Such a service would be cost prohibitive to many users, and therefore a site not economically feasible.

The applicant must have some estimates as to what user cost will be. Surely he has estimated what his equipment, operating cost will be and what he will need to turn a profit. If he plans to offer a range of services, then these should be looked at for anticipated number of customers and cost to customers.

- { (32) other communication firms could also give estimates to what user cost should be. at the public meeting on this draft, Jerry White from ACE asked Bruce to get down to it and asked what type of charge Bruce was looking at, but Bruce would not say.
- { (33) Development costs are estimated too high and are based on biased report of the applicant. ACE feels the costs are estimated too high - other professionals should be contacted for cost estimates - the cost of Lindenburg/Zaremba shouldn't double the cost of ~~the site~~ of a 1st alternative, because some things are already on Lindenburg. Crystal Mtn Communication has only contacted ACE once with an angry phone call regarding ~~reusing~~ space. ACE requested a plan in writing from CMC, but never received one, so how does one know what cost would be.
- { (34) Under Section 102(2) B of NEPA, unquantified environmental impacts, values, and amenities must be given appropriate considerations, along with economic and technical considerations. the Draft EIS has not done this. True, it is very difficult to put a ~~the~~ value of recreation experience into a cost factor, but I think the F.S needs to do this.
- { (35) The value of Crystal outweighs the value of a communication site on Crystal, because there is no substitute for Crystal, but there is for communication services. The long term ~~use~~ related value of Crystal as an recreation site for locals and visitors, is much higher, than value of ~~economic~~ economic gain and convenience of potential

customers who have other options.

The draft EIS has mentioned that cost of developing 2 sites may make project uneconomical to implement. Since the increased cost would be spread over the length of the project and supposedly hundreds of subscribers, additional cost should be minimal. Let's see some realistic figures, rather than hypothetical formulas.

Appendix A-Recreation Pg 5 - There are no substitutes for Crystal, since "none contain the array of values and amenities Crystal Mountain currently provide." Of substitutes listed, none compare to Crystal. Most of them listed require a stiff or bushwack to get to. The area of Rivers Roost does not offer the same hard rock alpine, timbered ecosystem Crystal does.

For the most part, this section was well written, but I would like to know where you will "displace" me to?

The F.S. has briefly mentioned in the document the possibility of powerlines, microwave, diesel generators, but no analysis or detailed explanation or fancy computer drawings have been included for such a proposal in this analysis. This is because of the late presentation of such a proposal by the applicant. In order to get the draft EIS out on time, ~~the~~ (at request of applicant) the F.S. did not include these proposals in a thorough analysis.

As recently as May 21, 1991, the F.S. had yet another meeting with Bruce Morgan, apparently

discussing yet another change in the proposal.

(44) It is unfair to ask people to comment, when not all the possibilities are even included. How are we suppose to comment on things, when we don't even know what it is we are talking about.

F.S. cannot just address these possibilities in a final or in an environmental assessment for special use permit, all these factors are relevant as to whether Crystal Mountain as a recreation site could be compatible with a ~~recreation~~<sup>communication</sup> site, and therefore could effect the decision of a site designation.

The F.S must consider the cumulative effects of an action and cannot break it down into smaller

(45) components parts. Under administrative law principles, an agency must consider all relevant factors when making any decision.

Under 1502.9 of NEPA, Agencies: (i) Shall prepare supplements to draft or final environmental impact statements if:

(i) the agency makes substantial changes in the proposed action that are relevant to environmental concerns  
or

(ii) there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action and its impacts

I feel any proposals of microwave, powerlines, diesel generators as well as any other proposals going on behind closed doors, are very relevant to environmental ~~consequences~~ concerns bearing

on the proposed action. I feel the F.S. should come out with a supplemental draft. I am not trying to simply drag this issue out or delay things - but there really are questions that need to be answered before a decision should be made.

I feel more people would comment on this issue because they do have concerns, but given the inappropriate behavior of the applicant, why should they bother. The applicant has repeatedly harassed, threatened, and make false accusations of people, both within the Forest Service and general public. The Forest Service has surfaced this type of behavior by catering to the whims of the applicant. People only have the time to write so many letters or attend meetings. People try to enter into good faith discussions and compromises. But why should they bother if compromises are changed and the scenario keeps changing.

Sincerely,  
Bob Reitz

Bob Reitz  
PO Box 1441  
Peterson, AK  
99833

# **C** Appendix

## Letter From Bev Reitz

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**Comment 1:**

"The Crystal Mountain Draft EIS appears biased in many ways and seems to be trying to justify a decision already made."

**Response 1:**

The EIS should be objective, able to support selection of any of the alternatives. The only section that should show any judgement is the identification of the Forest Service preferred alternative in Chapter 2. We have made every attempt to remove any bias from the Final EIS.

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**Comment 2:  
(Paraphrased)**

Bias 1: The placement of the recreation analysis in an appendix indicates that recreation appears to have been an after-thought of the analysis.

**Response 2:**

See response 86, Richardson letter.

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**Comment 3:**

Bias 2: "The Forest Service has relied extensively on the applicant for cost and user figures. Talking with other communication firms (ACE), they feel the costs listed are not realistic, but are too high. I would like to see an unbiased analysis given for the development and service costs."

**Response 3:**

We think the analysis of development and service costs is reasonable and unbiased. We asked our communication engineer if the figures were reasonable and he indicated they were similar to the estimates the Forest Service uses for Forest Service sites. But even if the estimates were high and we substituted lower site development costs, we'd still come up with the same *ratio* between user costs associated with each alternative. Services from Sumner would still cost a little more than from Crystal, and services from Lindenberg/Zaremba would still cost more than twice as much as from Crystal. We think it makes sense to ask the applicant to estimate costs because he knows what he's proposing and knows his sources for purchasing equipment and contracting construction.

See response 5, Rak letter.

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**Comment 4:**

Bias 3: "The Forest Service has editorialized comments given by recreationalists. (Chap 4, page 3) The Forest Service implies that no fences are proposed and that the generators used will be 'quiet.' However, elsewhere in the document, the Forest Service has admitted that fences could be a possibility if vandalism occurs, and that diesel generators are a possibility."

**Response 4:**

Diesel generators were described as potential reasonably foreseeable development and the effects were displayed in the cumulative effects section of the Draft EIS.

See Chapter 2 in the Final EIS regarding limits on fencing.

See response 86, Richardson letter, regarding removal of "editorials" because this EIS is intended to address the Forest Plan Amendment decision, designation, rather than a site-specific permit decision.

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## C Appendix

### Comment 5:

Bias 4: "The Forest Service also likes to point out (Chapter 4, page 3; Chapter 3, page 4) that the small communication structure that was on the summit [from] May '86 to August '90, did not prevent people from climbing the mountain or enjoying the experience and that the waterline does not prevent enjoyment of the experience – however, the small structure previously up there is a far cry from what is being proposed."

### Response 5:

We've changed the Final EIS to reflect displeasure and disappointment experienced by some hikers who discovered the communication structure on the summit from May 1986 to August 1990.

See response 77, Richardson letter, regarding the water supply pipeline.

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### Comment 6:

Bias 5: "Also, the shelter and garbage up there earlier was a disturbing site to many people upon reaching the summit -- many of who didn't know it was there until they reached the summit. Such a communication site that is being proposed and the foreseeable future development, is a major intrusion to a recreation experience."

### Response 6:

See response 5, Reitz letter, regarding acknowledgement in the Final EIS of the disturbing sight for some people.

See responses 7a and 77, Richardson letter, regarding acknowledgement of recreation impacts.

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### Comment 7:

Bias 6: The Forest Service performed a communication needs survey but didn't describe the 5-year recreation plan or the importance of Crystal Mountain for recreation. The recreational foresters report of 1-19-90 gave a good perspective of the recreation needs and values in the Crystal Mountain area.

### Response 7:

In the Draft EIS, the 5-year recreation plan was referenced in Chapter 3 (page 3) and the Recreation Appendix (page 3). More detail has been provided in the Final EIS including a paragraph in the Summary, and in Chapters 3 and 4. The Special Interest Area has been addressed in more detail, as has the history of local efforts to prevent development in the vicinity of Crystal Mountain and Blind Slough.

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### Comment 8:

Bias 7: "In the Final [EIS], I would like to see mention of the management concern for the potential of Blind Slough/Crystal Mountain complex to be designated a Special Area during the [Forest Plan] revision. As Brad Hunter's report states 'such a designation would most likely limit commercial development within the management area.' Wait for [the Forest Plan Revision]!"

### Response 8:

See response 1, Baade letter; response 53, Richardson letter; and response 7, Reitz letter.

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- Comment 9:** Bias 8: "I would also like to see some mention made of the history of local citizens interest in preserving recreation values of the area. I would also like included recreation needs anticipated for [the] next 10-15 years. Such areas as Crystal will become even more valuable, as such recreational opportunities decrease elsewhere."
- Response 9:** We have included a history of these efforts in the Final EIS as well as describing recreation use in more detail. See response 7, Reitz letter.
- 
- Comment 10:** "Chapter 1, page 7 - When relying on LUDs one must remember that the classifications are now being modified into smaller areas. Again, Crystal has potential to be part of a special area. Management is supposed to consider direction that may be part of the [Forest Plan] Revision. Also, due to the constraints of original LUDs and the fact they encompassed complete watersheds, Crystal was precluded from a more protective status."
- Response 10:** See response 1, Baade letter, regarding obligation to follow the current Forest Plan until a decision is made on the Forest Plan Revision.
- 
- Comment 11:** "[Chapter 1,] page 8 - While it is true that it is impossible to test every patch of ground, if an operable site is said to consistently and reliably hit a 'critical' area, on the ground testing should be done. Lindenberg Peak should be allowed to show what it can hit in reality."
- Response 11:** See response 3, Richardson letter.
- 
- Comment 12:** "Also, if any other peaks appear to give a reasonable indication that they would work, actual field testing should be conducted. I would like to see testing done from Lindenberg and Sumner."
- Response 12:** See responses 3 and 4, Richardson letter.
- 
- Comment 13:** Chapter 1, page 9: "The [communication needs] survey shows people are interested in such a service. However, the Forest Service has failed to analyze how these 'needs' could be served by other means or existing sites. What about Alascom, Marine Operators, Navy Peak, Lindenberg Peak, a microwave system rumoured to be coming to Southeast? There is no indication of what these potential users would be willing to pay, or what costs the market could bear."
- Response 13:** See response 56, Richardson letter, regarding Alascom and Marine Operator service.  
 See response 68, Richardson letter, regarding Navy Peak.  
 See response 5, Baade letter, regarding satellite microwave system.  
 See response 5, Rak letter, regarding user costs the market could bear.
-

**Comment 14:**

"Maybe there wouldn't be enough people willing to pay the price, and a development wouldn't be economically feasible."

**Response 14:**

The Draft EIS describes many people interested in the proposed services. See Chapter 2 in the Final EIS regarding limit to development that requires the site to be returned to natural condition if the facility becomes obsolete, is no longer used, or a permit is revoked or not renewed.

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**Comment 15:**

"Also, I feel the value of saving a businessman a trip to town to make a call, or allowing a vacationing businessman to maintain contact with a home office nowhere nears the value of Crystal Mountain as a recreation area for locals and visitors! How ridiculous! Others can use the Marine Operator!"

**Response 15:**

While this use may seem ridiculous to you, there are others who consider it invaluable.

---

**Comment 16:**

"All 'needs' and scoping surveys should be taken with a grain of salt. When looking over the returned surveys, it was obvious that one person had filled them out to be signed. The 'one' person was another communication firm."

**Response 16:**

We have no reason to suspect that the needs survey was abused. The copies to which you refer were submitted as responses to the scoping notice. However the Forest Service uses the scoping process to identify issues for analysis, not to count votes.

---

**Comment 17:**

Chapter 1, page 12: "I feel some mitigation measures should be addressed in the EIS for site designation. Since a big question is site compatibility with recreation, some site specifics are needed. A small communication shell with a small hum would be considered tolerable, compatible to a recreation site by some. However, large towers, propane platforms and tanks, powerlines, microwave, etc, would not be considered compatible."

**Response 17:**

Limits to development have been established in the Final EIS (see Chapter 2 of the Final EIS). If Crystal is designated, any development beyond these limits would require another Forest Plan amendment to expand the limits before the permit request could be addressed.

If Crystal Mountain is designated, mitigation of site-specific effects will be addressed in the permit analysis.

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- Comment 18:** "Whether a specific site would be compatible or not, should affect the designation decision. Designating Crystal would have cumulative effects and impacts and these must be looked at in the designation EIS. The Forest Service is not supposed to break a project down into smaller components."
- Response 18:** The Forest Service is not breaking a project into smaller components. This EIS addresses a land allocation, not a project. See response 1, Richardson letter.  
Cumulative effects have already been addressed in the Draft EIS and the limits established in the Final EIS will prevent unlimited expansion (see Chapter 2 in the Final EIS).
- 
- Comment 19:** "Mitigation measures were mentioned in the original [1990 designation] EA, why not this Draft EIS?"
- Response 19:** See response 17, Reitz letter.
- 
- Comment 20:** Chapter 1, page 4: "In a 1990 public meeting for mitigation measures, it was concluded an east summit facility would be preferred over a central summit. Why is it now back to central summit? People enter into good faith discussions, compromises, only to have them ignored."
- Response 20:** See response 44, Richardson letter.
- 
- Comment 21:** Chapter 2, page 10: "Site to be designated was originally 1/4 acre in size. Why is it now 1 acre?"
- Response 21:** If Crystal were designated, a one acre site would allow consideration of various locations for placement of a facility in a second, site-specific permit analysis.
- 
- Comment 22:** Chapter 2, page 22: "[Recreation] access could change if a fence was put up, or if access to the summit was impossible due to location of structure."
- Response 22:** See response 6, Baade letter.
- 
- Comment 23:** Chapter 3, page 2: "How can the estimate [for number of recreation users] be 50-200, or 0-250, when hatchery manager sees 100 from that side alone?"
- Response 23:** See responses 74 and 102, Richardson letter.
- 
- Comment 24:** Chapter 3, page 3: "Winter access is often by hiking, skiing, snowshoeing -- not helicopter."
- Response 24:** So changed.

## C Appendix

### Comment 25:

Chapter 3, page 5: "Sensitivity Level 2 rating may no longer reflect current sensitivity of Crystal Mountain users' -- what would be the new level, and how would it affect visual quality objectives?"

### Response 25:

See response 80, Richardson letter, regarding Sensitivity Levels.

Currently the area is inventoried as a Foreground, Sensitivity Level 2, Variety Class A area. This equates to an inventoried Visual Quality Objective (VQO) of "partial retention." Should the Sensitivity Level be changed from 2 to 1, the inventoried VQO would shift to "retention." The reader should remember this is an inventory VQO, which provides guidance to management. These VQO's are not assigned. With the completion of the Forest Plan Revision, VQO's will be assigned Forest-wide with the allocation of each land use designation.

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### Comment 26:

Chapter 4, page 2: "If low power radio users are the concern, the Forest Service should consider by what other means their 'needs' could be met -- Alascom, Lindenberg, marine operator, etc. Having to wait for a marine operator, is a small price to pay, when one considers the value of Crystal Mountain as a communication site."

### Response 26:

See response 13, Reitz letter.

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### Comment 27:

Chapter 4, page 2: "Access would not remain the same if summit was unobtainable due to fences, or location of facility."

### Response 27:

See response 6, Baade letter.

---

### Comment 28:

Cost to Users: (Chapter 4, pages 9-10) The 'hypothetical' comparison of each alternative based on a number of assumptions is meaningless and useless. The population figures used to determine user cost factor do not make sense to me. To get the total population covered by low and high power, are you adding Wrangell and Petersburg and surrounding area? Most people in these areas will not be requiring such a service offered by this communication site. This is important since it figures into the formula for user cost factor. You need to look at some reasonable, user numbers for each alternative you are going to consider if it is to be part of user cost. This user cost factor based on hypothetical situation is irrelevant. Have an economist look at this one again."

### Response 28:

Yes, we included Petersburg and Wrangell as well as outlying areas because the connection between the communities and the outlying areas is a crucial portion of the proposed service.

We don't see how we can get *real* numbers short of letting someone establish a facility and see what it really costs. That's why we developed the hypothetical comparison. See response 5, Rak letter, regarding ratios between sites rather than real costs tied to specific services.

See response 30, Richardson letter, regarding value of hypothetical example.

See responses 95 and 96, Richardson letter, regarding assumptions used in developing cost factors.

As you requested, we had our economist review the assumptions and calculations and he thought they were reasonable.

---

- Comment 29:** "Cost to Users: Population in these included areas could be covered by other offered services -- Alascom, Lindenberg, Navy Peak, marine operator, etc."
- Response 29:** See response 13, Reitz letter.
- 
- Comment 30:** "No analysis or a yearly hook-up cost, monthly or yearly cost per users was included in this analysis. Such a service would be cost prohibitive to many users, and therefore a site not economically feasible."
- Response 30:** See response 28, Reitz letter, regarding hypothetical figures.  
See Chapter 2 of the Final EIS regarding limit that would require returning the site to natural conditions if the facility becomes obsolete or is otherwise no longer used.
- 
- Comment 31:** "The applicant must have some estimates as to what user cost will be. Surely he has estimated what his equipment, operating cost will be and what he will need to turn a profit. If he plans to offer a range of services, then these should be looked at for anticipated number of customers and cost to customers."
- Response 31:** The applicant has estimated what his site development, equipment, and operating costs would be and we've used these figures to develop the user cost factors for each alternative. See response 5, Rak letter, regarding ratio between alternatives for any given service cost on Crystal.  
A detailed market analysis would be required to develop the figures you request for anticipated numbers of customers and cost to customers for each service. Such an analysis could easily cost more than site development and purchase of equipment. The Forest Service thinks the interest expressed in services from Crystal adequately indicates a viable market.
- 
- Comment 32:** "Other communication firms could also give estimates to what user cost should be. At the public meeting on this draft [EIS], Jerry Whitethorn of ACE asked Bruce to get down to it and asked what type of charge Bruce was looking at, but Bruce would not say."
- Response 32:** See replies 3 and 31, Reitz letter.
- 
- Comment 33:** "Development costs are estimated too high and are based on biased report of the applicant. ACE feels the costs are estimated too high -- other professionals should be contacted for cost estimates --"
- Response 33:** See reply 3, Reitz letter.
-

## C Appendix

**Comment 34:** " -- the cost of Lindenberg/Zarembo shouldn't double the cost of a one-site alternative, because something is already on Lindenberg."

**Response 34:** See response 94, Richardson letter.

---

**Comment 35:** "Crystal Mountain Communication has only contacted ACE once with an angry phone call regarding renting space. ACE requested a plan in writing from CMC, but never received one, so how does one know what cost would be?"

**Response 35:** See response 94, Richardson letter.

---

**Comment 36:** "Under Section 102(2)B of NEPA, unquantified environmental impacts, values, and amenities must be given appropriate considerations, along with economic and technical considerations. The Draft EIS has not done this"

**Response 36:** We disagree with your assessment of the Draft EIS. We feel we have already displayed this information thoroughly, in *quantitative* terms when possible, and otherwise in *qualitative* terms.

---

**Comment 37:** "True, it is very difficult to put a value of a recreation experience into a cost factor, but I think the Forest Service needs to do this."

**Response 37:** See response 10, Richardson letter.

---

**Comment 38:** "The value of Crystal outweighs the value of a communication site on Crystal, because there is no substitute for Crystal, but there is for communication services. The long term relative value of Crystal as a recreation site for locals and visitors, is much higher, than value of economic gain and convenience of potential customers who have other options."

**Response 38:** We think there are no good substitutes for recreation or communication on Crystal Mountain; however, a communication designation would still allow both uses to occur.

See response 10, Richardson letter, regarding recreation value of Crystal Mountain.

---

**Comment 39:** "The Draft EIS has mentioned that cost of developing 2 sites may make project uneconomical to implement. Since the increased cost would be spread over the length of the project and supposedly hundreds of subscribers, additional cost should be minimal. Let's see some realistic figures, rather than hypothetical formulas."

**Response 39:** See response 31, Reitz letter, regarding use of hypothetical figures.

The length of project and number of potential users have already been calculated into the user cost factors (the length of the project is shown in Table 4-1, line 5; the number of potential subscribers is shown in Table 4-2, lines 2 & 3).

---

- Comment 40:** Appendix A - Recreation, Page 5: 'There are no substitutes for Crystal, since 'none contain the array of values and amenities Crystal Mountain currently provides.' Of substitutes listed, none compare to Crystal. Most of these listed require a skiff or bushwack to get to. The area of Ravens Roost does not offer the same hard rock alpine, treeless ecosystem Crystal does.'
- Response 40:** See responses 8, Baade letter.
- 
- Comment 41:** For the most part, this section was well written, but I would like to know where you will 'displace' me to?"
- Response 41:** See response 8, Baade letter.
- 
- Comment 42:** The Forest Service has briefly mentioned in the document the possibility of powerlines, microwave, diesel generators, but no analysis or detailed explanation or fancy computer drawings have been included for such a proposal in this analysis."
- Response 42:** In the Draft EIS, these items have been described in the reasonably foreseeable development section of Chapter 4, including the picture in Figure 4-4. The picture shows microwave and diesel generators. There is no powerline because the powerline would be buried or resting on the ground, as described in the limits in Chapter 2 of the Final EIS.  
See response 1, Richardson letter, regarding the difference between this Forest Plan amendment and a second, site-specific permit analysis.
- 
- Comment 43:** "This [point addressed in comment 42] is because of the late presentation of such a proposal by the applicant. In order to get the Draft EIS out on time (at request of applicant) the Forest Service did not include these proposals in a thorough analysis."
- Response 43:** See response 42, Reitz letter. See response 15(2), Richardson letter.
- 
- Comment 44:** "As recently as May 21, 1991, the Forest Service had yet another meeting with Bruce Morgan, apparently discussing yet another change in the proposal. It is unfair to ask people to comment, when not all the possibilities are even included. How are we supposed to comment on things, when we don't even know what it is we are talking about?"
- Response 44:** The Forest Service has not received any new proposals related to Crystal Mountain, and the Forest Service did not have a meeting to discuss a change in Mr. Morgan's proposal. The purpose of the May 21 meeting was, as we explained at the time, to consider whether the applicant's suggestions for limitations would be useful in addressing fears that a site would expand indefinitely once designated.  
See Chapter 2 of the Final EIS regarding limits to development.

**Comment 45:**

"[The] Forest Service cannot just address these possibilities in a Final [EIS] or in an environmental assessment for special use permit. All these factors are relevant as to whether Crystal Mountain as a recreation site could be compatible with a communication site, and therefore could affect the decision of a site designation."

**Response 45:**

See responses 18 and 42, Reitz letter. The Forest Service has already addressed reasonably foreseeable development in the Draft EIS.

See response 1, Richardson letter, regarding the Forest Service two-step decision making process, distinguishing Forest Plan direction from project decisions.

See Chapter 2 of the Final EIS regarding limits to development in the Final EIS, beyond which no project could expand without revisiting this Forest Plan amendment.

---

**Comment 46:**

"The Forest Service must consider the cumulative effects of an action and cannot break it down into smaller components parts. Under administrative law principles, an agency must consider all relevant factors when making any decision."

**Response 46:**

We have not broken an *action* in smaller components. This decision relates to an amendment to the Forest Plan. See responses 42 and 44, Reitz letter; response 1, Richardson letter.

---

**Comment 47:**

"Under 1502.9 of NEPA, Agencies: (1) shall prepare supplements to Draft or Final EISs if: (i) the agency makes substantial changes in the proposed action that are relevant to environmental concerns or (ii) there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action and its impacts."

"I feel any proposals of microwave, powerlines, diesel generators as well as any other proposals going on behind closed doors, are very relevant to environmental concerns bearing on the proposed action. I feel the Forest Service should come out with a supplemental Draft [EIS]. I am not trying to simply drag this issue out or delay things -- but there really are questions that need to be answered before a decision should be made."

**Response 47:**

The Forest Service sees no basis for a supplemental Draft EIS. There is no change in the proposed action; there are no significant new circumstances or information; reasonably foreseeable development has already been addressed; and the decision to be made is whether to designate Crystal, not whether to authorize a site development plan and special use permit.

See response 44, Reitz letter, regarding no new proposed actions.

See response 1, Richardson letter, regarding cumulative effects and the difference between Forest Plan direction and site-specific project decisions.

---

**Comment 48:**

"I feel more people would comment on this issue because they do have concerns, but given the inappropriate behavior of the applicant, why should they bother. The applicant has repeatedly harassed, threatened, and made false accusations of people, both within the Forest Service and general public. The Forest Service has reinforced this type of behavior by catering to the whims of the applicant. People only have the time to write so many letters or attend meetings. People try to enter into good faith discussions and compromises. But why should they bother if compromises are changed and the scenario keeps changing."

**Response 48:**

We agree that this process has been extremely difficult for a variety of reasons. Thanks for your considerable effort in reviewing the Draft EIS.

---

## **C** Appendix

Telecopy  
Received ✓ Sent  
Date: 6-3  
Time: 8:15 a.m.



To:

**Fax Number:**

X	Rick Reed, DFG, Habitat . . . . .	49	
—	Janet Schempf, DFG, Habitat . . . . .	49	
—	Don Cornelius, DFG, Habitat . . . . .	61	
—	Dave Hardy, DFG, Habitat . . . . .	63	
—	Jack Gustafson, DFG, Habitat . . . . .	55	
—	Art Dunn, DOT/PF . . . . .	364-3250	Attn: _____
—	Jim McAllister, DNR/DOF . . . . .	18	Attn: _____
X	Valerie DeLaune, DNR, DLWM . . . . .	82	Attn: _____
X	Elena Witkin, DEC, SERO . . . . .	44	Attn: _____
—	COE . . . . .	88	Attn: _____
—	EPA . . . . .	90	Attn: _____
—	NMFS . . . . .	586-7131	Attn: _____
—	FWS . . . . .	93	Attn: _____
X	<u>Personnel uses Pet.</u>	<u>772-3314</u>	Attn: _____
	<u>Stikine area</u>		Attn: _____
			Attn: _____

Date: 5/1 Time: \_\_\_\_\_

**Number of Pages Transmitted (excluding transmittal memo):** .

From:

*Donna Marshall*  
DIVISION OF GOVERNMENTAL COORDINATION

**SOUTHEAST CONSISTENCY REVIEW SECTION**  
431 North Franklin Street  
P.O. Box AW  
Juneau, Alaska 99811-0165  
Phone Number: (907) 465-3562  
Fax Number: (907) 465-3076

## **CONTENT:**

**MESSAGE:**

**C Appendix**

RICK -- DRAFT -- PLS REVIEW & COMMENT ON  
MONDAY 6/3. I HAVE GONE FURTHER THAN YOUR  
COMMENTS BY INFORMING THE USFS THIS ACTIVITY  
WILL NOT NEED TO BE REVIEWED FOR ACMP  
CONSISTENCY. BELIEVE THAT IS IN LINE WITH YOUR  
THINKING... LO, 6/1

Also fx to DEC 1 AM

June 1, 1991

Mr. Mark Hummel  
Team Leader  
P.O. Box 309  
Petersburg, AK 99833

Dear Mr. Hummel:

SUBJECT: CRYSTAL MOUNTAIN COMMUNICATION SITE DEIS  
STATE ID NO. AK910417-19J

The Division of Governmental Coordination has completed coordinating the State of Alaska's review of the draft EIS for the subject project per the National Environmental Policy Act (NEPA). We appreciate the opportunity to participate at this stage of planning, and offer a consolidated response on behalf of the State resource agencies. A review of the scoping document occurred in February, under State review AK910207-03J. As this review was conducted to satisfy the requirements of NEPA, the State comments include a broad range of issues.

In addition to NEPA, the facility would ultimately be required to be consistent with the standards of the Alaska Coastal Management Program (ACMP) per 15 CFR 930, Subpart D, if the criteria discussed in detail later in this letter are present.

The project is a proposal from Crystal Mountain Communications to develop a communication site on Crystal Mountain, located on the southwest portion of Mitkof Island. This proposal would require two actions from the US Forest Service – designating the mountain for such use, and authorizing the facility through a special use permit. An analysis of communication needs showed a desire for communication coverage that could be provided from Crystal Mountain. This project would provide communication capabilities (such as handheld radios and cellular phones) between Petersburg and Wrangell. Specifically, the site could provide line-of-sight communication to Petersburg and Wrangell, low power coverage of much of the rural areas and waterways in the Stikine area, and high power coverage of 6,750 miles and a population of 7,000 people.

The compatibility of designation with the recreational use of the mountain is at issue. Alternative 1 would allow recreational access and development of a trail, and would change the nature of the recreational experience at the summit area, due to the presence of structure (shelter and antennas). It is a popular mountain for hiking, because it is the tallest mountain in the vicinity and the view from the top is spectacular. Therefore, the EIS was developed to show tradeoffs between communication needs and recreational needs. The USFS has proposed that the Crystal Mountain be designated because no private or State lands are available that would provide the needed communication services.

#### NEPA COMMENTS

The following comments address both current and perceived increased activity from future expansion, as the remand order stated the document should "present information on the future expansion at the Crystal Mountain site, a reasonably foreseeable event given the site's advantage and the interim directive's direction to maximize the efficient use of sites."

**C Appendix**

The wildlife sections in the NEPA document should be revised in the FEIS to include the following information and assessments. The species of raptors listed in the DEIS as using the mountain top appear to include only resident species. We believe that migratory species, such as peregrine falcons, goshawks, merlins, and sharp shinned hawks, also use the mountain top, particularly during spring and fall migrations. Important prey species for raptors around the mountain top are willow and rock ptarmigan.

(1) The FEIS should discuss the future development of the site including the possible need for antennas supported by guy wires and the bird strikes that could result. Similarly, the FEIS should note that if it is not feasible to bury a power line as discussed in the DEIS, suspension of an overhead power line could also result in bird strikes.

(2) Although the currently proposed level of helicopter access to the site for servicing the facility is minimal, future development could increase this activity. Increased levels of helicopter activity will adversely impact consumptive and nonconsumptive users of wildlife on the mountain top. Possible mitigation could include a requirement that the mountain be approached from the back side or other designated route, and that the period of the open deer hunting season on Mitkof island (currently a two-week period) be avoided.

(3) Construction of the new trail discussed in the document may improve public access to the mountain top. The FEIS should note that improved access to the small isolated rock and willow ptarmigan populations will result in increased hunting pressure. Hunting restrictions may be needed to protect this vulnerable population from overharvesting. The isolation of the population reduces the probability of recruitment of birds from adjacent mountains to replenish a depleted population.

## ACMP COMMENTS

15 CFR 930.50, the federal regulations for the Coastal Zone Management Act, states "federally ... permitted activities affecting the coastal zone are conducted in a manner consistent with approved management plans." An ACMP review would be required under two scenarios:

1. If the site is in the coastal zone, or if not, caused spillover impacts to the coastal zone. Does this activity affect the coastal zone since it is on a mountain top?" The Coastal Zone Boundaries of Alaska, 1988, is a reference in determining whether an activity is located within the State's coastal zone. In southeast Alaska, the inland boundary is principally defined as the timberline of the Sitka spruce/hemlock coastal forest. Also, federal lands are excluded from the State's coastal zone. However, the activities authorized by federal agencies that may have a spillover impact are subject to the ACMP.
2. If in the coastal zone or spillover impacts to the coastal zone are expected, ACMP is applicable if the cost of the project is significant enough to indicate there would be impacts to the coastal resources (\$250,000 according to the current Memorandum of Understanding between the USFS and the State).

The reviewers commented that no ACMP issues are anticipated, and it appears this activity is not in the coastal zone and spillover impacts are not expected. Therefore, a review of this activity under the ACMP will not be required. We do, however, look forward to participating in the NEPA review of the final EIS.

Sincerely,

CRYSTAL MOUNTAIN DESIGNATION FEIS

APPENDIX C ■ 109

## C Appendix

# Letter From Lorraine Marshall, Alaska Division of Governmental Coordination

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**Comment 1:**

The wildlife sections in the NEPA document should be revised in the Final EIS to include the following information and assessments. The species of raptors listed in the Draft EIS as using the mountain top appear to include only resident species. We believe that migratory species, such as peregrine falcons, goshawks, merlins, and sharp shinned hawks, also use the mountain top, particularly during spring and fall migrations. Important prey species for raptors around the mountain top are willow and rock ptarmigan.\*

**Response 1:**

We agree that migratory species probably use the mountain top. We have described species and likelihood of fatal collisions in greater detail in the Final EIS.

---

**Comment 2:**

The Final EIS should discuss the future development of the site including the possible need for antennas supported by guy wires and the bird strikes that could result. Similarly, the Final EIS should note that if it is not feasible to bury a power line as discussed in the Draft EIS, suspension of an overhead power line could also result in bird strikes.\*

**Response 2:**

The reasonably foreseeable development has already been described in the Draft EIS. In the Final EIS, we have described the likelihood of collision in greater detail. See Chapter 2 of the Final EIS regarding limits to development that preclude guywires and require any powerline to be buried or laid on the ground surface at elevations above the treeline.

---

**Comment 3:**

Although the currently proposed level of helicopter access to the site for servicing the facility is minimal, future development could increase this activity. Increased levels of helicopter activity will adversely impact consumptive and nonconsumptive users of wildlife on the mountain top. Possible mitigation could include a requirement that the mountain be approached from the back side or other designated route, and that the period of the open deer hunting season on Mitkof island (currently a two-week period) be avoided.\*

**Response 3:**

See Chapter 2 of the Final EIS for limits that would prevent unlimited development. If Crystal Mountain is designated, mitigation will be considered in a second, site-specific permit analysis.

---

## C Appendix

**Comment 4:**

"Construction of the new trail discussed in the document may improve public access to the mountain top. The Final EIS should note that improved access to the small isolated rock and willow ptarmigan populations will result in increased hunting pressure. Hunting restrictions may be needed to protect this vulnerable population from overharvesting. The isolation of the population reduces the probability of recruitment of birds from adjacent mountains to replenish a depleted population."

**Response 4:**

We have noted in the Final EIS that a trail could result in increased hunting pressure. If the trail is constructed, mitigation will be considered in the site-specific analysis.

---

**Comment 5:**

"The reviewers commented that no ACMP issues are anticipated, and it appears this activity is not in the coastal zone and spillover impacts are not expected. Therefore, a review of this activity under the ACMP will not be required. We do, however, look forward to participating in the NEPA review of the Final EIS."

**Response 5:**

We agree that no ACMP review is required.

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received 6-3-91

Appendix C

Box 1063  
Petersburg, Alaska  
June 3, 1991

Mark Hummel  
Team Leader  
U.S. Forest Service  
P.O. Box 309  
Petersburg, Alaska 99833

Dear Mr. Hummel,

Thank you for allowing me to respond to the Draft Environmental Impact Statement for Crystal Mountain Communication Site Designation.

I am opposed to Crystal Mountain being designated as a communication site for several reasons. I feel the benefits for recreational use, particularly in the future, far outweigh those that might be realized by a communications facility on its summit. The proposed communication facility would destroy the sense of wilderness that one seeks while climbing this highest peak on Mitkof Island. As such places become rarer, they assume more value to recreational users. Crystal Mountain is the most accessible mountain on Mitkof and no other provides a view like it does from the summit. It is one of the few places I always take out-of-town guests if they are able to hike. I climb the mountain a couple time each summer and always see other people doing the same.

I have enclosed a letter to the editor of the Petersburg Pilot from May 23, 1991 stating one tourist's feelings about development of a communications site on Crystal Mountain. I think that one of the reasons tourists come here is because Alaska is supposed to be the "Last Frontier." According to Dave Berg at Viking Travel in Petersburg, the number of tourists coming to Petersburg is increasing. According to Berg, 6,000 people will be disembarking from cruise ships here this summer; 1,900 will be spending two nights here. According to information from the Marine Highway System the number of vehicles originating in Prince Rupert and Bellingham and disembarking in Petersburg from May through August 1990 was 283 (please see attached data). Petersburg job service said approximately 500 non residents are employed by canneries in Petersburg each summer. All the above are potential recreational users in addition to the local residents who use Crystal Mountain right now. Although the Draft Environmental Impact Statement claimed that the proposed communication facility could reach 7,000 people; 2,683 (1,900 + 283 + 500) non residents could potentially climb the mountain in one summer alone.

The figure of 7,000 people (Chapt. 2 pg 3) is misleading. Petersburg and Wrangell combined have a population of 6,000+, and there is telephone communication between the two. Of the remaining 1,000, those on the Stikine River, Sumner Strait, and Point Baker perhaps could be served from a communications facility located on a peak near Wrangell. Also, on Page 3 Chapter 2 to quote, "There is considerable desire for services proposed, as described in Chapter 1 under 'Demand for Site and Services.' According to page 9 chapter 1 only 19 need serveys representing 20 groups or individuals were returned out of 100 sent. That to me does not show "considerable" desire for services.

The U.S. Forest Service needs to consider the possibility that the proposed type of communications from Crystal Mountain (VHF, UHF, microwave, cellular telephone, etc. - Chapt. 1 pg 4) may be obsolete in the very near future due to advancements in communication technology such as satellite communication. I feel it behooves the Forest Service to wait for at least 5 years on the decision of designating Crystal Mountain a

## C Appendix

-2-

{ ⑥ communications site because "once improvements are in place, changing the management direction becomes difficult" (chapt. 1 Pg 7). At the rate that communications technology is developing, Crystal Mountain may not need to be developed for a site to achieve the same ends. Furthermore, the lack of development will increase Crystal Mountain's value to recreational users who are finding undeveloped places becoming rarer each year.

{ ⑦ I also question the proposed development. The first public meeting I attended, it appeared that Mr. Morgan was amenable to putting an antenna and building on the East Summit instead of the central summit. At the second meeting I attended when the Draft E.I.S. was presented, Mr. Morgan had changed his plans so that the facility was located on the central summit. Furthermore, he had added in a microwave dish and proposed a powerline up the mountain from the lake. These developments make the proposed facility much larger than initially mentioned. Albeit these developments are not guaranteed should Crystal Mountain be designated a communications site, but does the U.S. Forest Service have measures to limit unbridled expansion? What would it take to keep Mr. Morgan from getting carte blance to proceed however he wants?

{ ⑧ This brings up another point. The Draft E.I.S. only takes into account Mr. Morgan's proposed facility. Should Crystal Mountain be designated a communications site, I would hope proposals would be solicited for the development of the site, and that the least environmentally destructive and aesthetically unoffensive one would seriously be taken into consideration. In addition to recreational habitat that could possibly be irrevocably lost, habitat for willow and rock ptarmigan and breeding American pipits could be as well. Furthermore, collisions between the numerous migratory birds (raptors, Swans, Sandhill Cranes, Snow and Canada Geese) using the thermals above the peak and antennas on the summit are a possibility.

{ ⑩ Lastly, I think alternative sites such as Sumner Mountain need to be considered again. Perhaps a higher antenna on Sumner Mountain could achieve the same coverage as that anticipated by Crystal Mountain. On-the-ground tests should also be conducted before ruling out an alternative site. The experience of climbing Crystal Mountain is unique, and there are no alternative mountains on Mitkof that can be substituted to accomplish the same end. I feel Alternative One would destroy the recreational experience of many, not a few as noted in Chapter 4 pg 3. People do not climb Crystal Mountain to see antennas, buildings, propane tanks, powerlines, etc. They can stay in Petersburg or in any city to see that. I strongly urge all persons involved in determination of designation of the site to climb the mountain before making any decision. Then perhaps those involved will have a better understanding of the import such a decision will have on recreation in the area for generations of users to come.

Sincerely,

*Deborah Boettcher*

Deborah Boettcher

# PILOT OPINION PAGE



## Letters to the Editor

Leave Crystal  
Mountain natural

To the Editor:

I have not yet made it to the top of Crystal Mountain, but I have spent many hours fishing in Blind River Rapids looking up at her snowy peak. I do not go to Alaska to look at satellite dishes and radio towers. There are plenty of those everywhere.

highest points. Now, one must go several hours to find those few isolated places where man has not built

**To the Editor:** I have not yet made it to the top of Crystal Mountain, but I have spent many hours fishing in Blind River Rapids looking up at her snowy peak. I do not go to Alaska to look at satellite dishes and radio towers. There are plenty of those everywhere else.

Presently, I work on the Island of Gran Canaria, a well known European vacationland. The Canary Islands, like Southeast Alaska, forgot to sign

Some people feel at home in the cities, surrounded by buildings. Some people need more space. Gran Canaria has only one beach left, and the apathy of the majority gives me little hope that anyone coming here in a few years will find it. Mitkof has only one Crystal Mountain, and I thank the people who care enough to challenge this unnecessary equipment station. I still want to come back to Crystal Mountain, but right now I am

Presently, I work on the Island of Gran Canaria, a well known European vacationland. The Canary Islands, like Southeast Alaska, forgot to stop building on its beaches and its Mountain, and I thank the people who care enough to challenge this unnecessary equipment, station. I still want to come back to Crystal Mountain, but not to see another satellite dish.

Sincerely,  
Mark H. Jackson  
Las Palmas, Gran Canaria

# C Appendix

MAY 16, 1991 STATE OF ALASKA PAGE: 04  
 10:20 DOT / PF MARINE HIGHWAY SYSTEM  
 RECAP SUMMARY TLMR0435

RECAP SUMMARY FOR: SOUTHEAST

FROM 01MAY90 TO 31MAY90

VEHICLES:

# ON # OFF

CITY:	SGY	HNS	JNU	SIT	PSG	WRG	KTN	YPR
SGY	505	206	218	9	1	2	8	55
HNS	884	268	345	26	18	11	36	68
JNU	1,503	239	676	109	62	22	69	75
SIT	377	13	37	184	20	5	32	
PSG	318	2	21	86	80	18	25	32
WRG	204		9	30	3	93		25
KTN	1,433	7	53	77	37	54	148	188
YPR	858	54	127	124	32	35	30	424
HYD								
HOL	621						602	18
MET	170							168
HNH	179	1	3	150	24			
PEL	8			8				
TKE	1			1				
HNH	74			37	35			
KAE	68			14	15	39		
BEL	619	75	227	102	21	24	13	157
TOT	7,822	659	1,359	1,376	391	346	249	1,558
								461

MAY 16, 1991 STATE OF ALASKA PAGE: 04  
10:21 D O T / P F MARINE HIGHWAY SYSTEM  
RECAP SUMMARY TLMR0435

**RECAP SUMMARY FOR: SOUTHEAST**

FROM 01JUN90 TO 30JUN90

**VEHICLES:**

# ON            # OFF

**C Appendix**

MAY 16, 1991            STATE OF ALASKA            PAGE: 04  
10:22            DOT / PF MARINE HIGHWAY SYSTEM  
                  RECAP SUMMARY                    TLMR0435

=====  
RECAP SUMMARY FOR: SOUTHEAST                    FROM 01JUL90 TO 31JUL90  
=====

## VEHICLES:

# ON      # OFF

CITY:	SGY	HNS	JNU	SIT	PSG	WRG	KTN	YPR
SGY	1,987		886	505	21	15	3	411
HNS	3,058	1,246		913	66	26	4	479
JNU	2,707	571	1,001		265	195	13	294
SIT	778	27	49	380		120	9	57
PSG	715	16	17	98	167		198	76
WRG	418	2	9	19	14	118		216
KTN	2,358	15	44	148	112	113	176	
YPR	1,981	315	388	361	74	-57	34	683
HYD		41						36
HOL		623						592
MET		128						123
HNH		110	4	92	14			
PEL		11		11				
TKE		2		1	1			
HNH		56	3	33	20			
KAE		73	1	7	10	51		
BEL		475	82	171	58	49	18	2
TOT		15,521	2,274	2,573	2,626	813	713	439
								2,176
								2,060

MAY 16, 1991            STATE OF ALASKA            PAGE: 04  
 10:23            DOT / PF MARINE HIGHWAY SYSTEM  
 RECAP SUMMARY            TLMR0435

## RECAP SUMMARY FOR: SOUTHEAST

FROM 01AUG90 TO 31AUG90

## VEHICLES:

# ON    # OFF

CITY:	SGY	HNS	JNU	SIT	PSG	WRG	KTN	YPR
SGY	1,600	698	399	22	9	3	26	356
HNS	2,964	1,101	1,088	55	26	11	60	415
JNU	2,344	461	789	289	173	24	144	212
SIT	566	29	62	188	101	12	61	40
PSG	516	4	19	58	47	172	100	61
WRG	350	2	19	26	9	43	203	43
KTN	2,382	14	70	105	53	56	116	803
YPR	1,426	183	292	241	53	49	23	544
HYD								39
HOL								774
MET								43
HNH	118	2	12	96	8			
PEL	15			15				
TKE	1			1				
HNH	59		3	28	23	2		
KAE	53		3	9	13	26		
BEL	564	59	237	75	40	19	8	126
TOT	13,992	1,855	2,204	2,329	612	504	369	2,223
								1,973

## C Appendix

## Letter From Deborah Boettcher

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**Comment 1:**

"I am opposed to Crystal Mountain being designated as a communication site for several reasons. I feel the benefits for recreational use, particularly in the future, far outweigh those that might be realized by a communications facility on its summit."

**Response 1:**

See response 10, Richardson letter, regarding the value of Crystal Mountain.

See response 7a, Richardson letter, regarding the fact that a communication facility would not prevent people from recreating on Crystal Mountain.

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**Comment 2:**

"The proposed communication facility would destroy the sense of wilderness that one seeks while climbing this highest peak on Mitkof Island. As such places become rarer, they assume more value to recreational users. Crystal Mountain is the most accessible mountain on Mitkof and no other provides a view like it does from the summit..."

**Response 2:**

See response 77, Richardson letter, regarding the presence of other signs of human activity in the area.

See response 8, Baade letter, regarding changes in the recreation experience and lack of substitutes.

See response 10, Richardson letter, regarding value of Crystal Mountain.

---

**Comment 3:**

"...I think that one of the reasons tourists come here is because Alaska is supposed to be the 'Last Frontier.' ...the number of tourists coming to Petersburg is increasing... 6,000 people will be disembarking from cruise ships here this summer; 1,900 will be spending two nights here... the number of vehicles originating in Prince Rupert and Bellingham and disembarking in Petersburg from May through August 1990 was 283... approximately 500 non residents are employed by canneries in Petersburg each summer. All the above are potential recreation users in addition to the local residents who use Crystal Mountain right now. Although the Draft EIS claimed that the proposed communication facility could reach 7,000 people; 2,683 (1,900 + 283 + 500) non residents could potentially climb the mountain in one summer alone."

**Response 3:**

Good point. That's an interesting piece of research we hadn't thought of and it brings up an interesting point -- that hundreds of new visitors could change Crystal Mountain considerably. We realize that not all of those people would in fact visit, just as not all people within range of Crystal would buy communication services. But the desire for communication is only one of many influences, including recreation, that tend toward change and development in Alaska.

---

## C Appendix

**Comment 4:**

"The figure of 7,000 people is misleading. Petersburg and Wrangell combined have a population of 6,000+, and there is telephone communication between the two. Of the remaining 1,000, those on the Stikine River, Sumner Strait, and Point Baker perhaps could be served from a communications facility located on a peak near Wrangell."

**Response 4:**

The point is to link the two communities with radio users in outlying areas. See response 24, Richardson letter.

---

**Comment 5:**

The communication needs survey resulted in only 19 surveys were returned out of 100 sent. That to me does not show 'considerable' desire for services, as the Draft EIS states.

**Response 5:**

We think replies from 19 percent of those queried to be a good return on an unsolicited mail survey. Three-quarters of those returned identified areas where people wanted services, and three-quarters of those identifying areas requested areas Crystal could cover. That seems like a lot to us, but we agree that we can let the figures speak for themselves. We've deleted the word "considerable" from the Final EIS. We received two more replies to the Needs Survey following publication of the Draft EIS, bringing the total to 21.

---

**Comment 6:**

"The Forest Service needs to consider the possibility that the proposed type of communications from Crystal Mountain (VHF, UHF, microwave, cellular telephone, etc., may be obsolete in the very near future due to advancements in communication technology such as satellite communication. I feel it behooves the Forest Service to wait for at least 5 years on the decision of designating Crystal Mountain a communications site because [as the Draft EIS states], 'once improvements are in place, changing the management direction becomes difficult... furthermore, the lack of development will increase Crystal Mountain's value to recreational users who are finding undeveloped places becoming rarer each year.'

**Response 6:**

There is need for the communication services now, as described in Chapter 1 of the Draft EIS, but no one expects to have affordable satellite service for ten years. In addition, ground stations will still be important in conjunction with satellites (see response 5, Baade letter). If the site does become obsolete, limitations included in the Final EIS require that the site be returned to its natural condition (see Chapter 2 of the Final EIS).

---

**Comment 7:**

"I also question the proposed development. The first public meeting I attended, it appeared the Mr. Morgan was amenable to putting an antenna and building on the east summit instead of the central summit. At the second meeting I attended when the Draft EIS was presented, Mr. Morgan had changed his plans so that the facility was located on the central summit. Furthermore, he had added in a microwave dish and proposed a powerline up the mountain from the lake. These developments make the proposed facility much larger than initially mentioned. Albeit these developments are not guaranteed should Crystal Mountain be designated a communications site, but does the Forest Service have measures to limit unbridled expansion? What would it take to keep Mr. Morgan from getting carte blanche to proceed however he wants?"

**Response 7:**

See Chapter 2 of the Final EIS regarding limits to development.

See response 44, Richardson letter, regarding the decision on east versus central summit being addressed in the site-specific permit analysis. Also response 1, Richardson letter, on the same point.

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**Comment 8:**

"This brings up another point. The Draft EIS only takes into account Mr. Morgan's proposed facility. Should Crystal Mountain be designated a communications site, I would hope proposals would be solicited for the development of the site, and that the least environmentally destructive and aesthetically unoffensive one would seriously be taken into consideration."

**Response 8:**

No interest has been shown by other parties in developing a communication facility on Crystal Mountain.

---

**Comment 9:**

"In addition to recreational habitat that could possibly be irrevocably lost, habitat for willow and rock ptarmigan and breeding American pipits could be as well. Furthermore, collisions between the numerous migratory birds (raptors, Swans, Sandhill Cranes, Snow and Canada Geese) using the thermals above the peak and antennas on the summit are a possibility."

**Response 9:**

Impacts to birds and likelihood of collision have been described in greater detail in the Final EIS.

---

**Comment 10:**

"Lastly, I think alternative sites such as Sumner Mountain need to be considered again. Perhaps a higher antenna on Sumner Mountain could achieve the same coverage as that anticipated by Crystal Mountain. On-the-ground tests should also be conducted before ruling out an alternative site."

**Response 10:**

See response 4, Richardson letter, regarding Sumner Mountain.

See response 3, Richardson letter, regarding on-the-ground testing.

---

## C Appendix

### Comment 11:

"The experience of climbing Crystal Mountain is unique, and there are no alternative mountains on Mitkof that can be substituted to accomplish the same end. I feel Alternative 1 would destroy the recreational experience of many, not a few as noted in Chapter 4 page 3. People do not climb Crystal Mountain to see antennas, buildings, propane tanks, powerlines, etc. They can stay in Petersburg or in any city to see that. I strongly urge all persons involved in determination of designation of the site to climb the mountain before making any decision. Then perhaps those involved will have a better understanding of the import such a decision will have on recreation in the area for generations of users to come."

### Response 11:

We stand by our estimate that relatively few people would choose never to return to Crystal Mountain. We agree that people don't climb Crystal Mountain to see a communication site and yet we don't think a communication site would physically prevent anyone from climbing. See response 8, Baade letter.

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# **Appendix D**

**Letter from the  
National  
Telecommunications  
and Information  
Administration**





**U.S. DEPARTMENT OF COMMERCE**  
**National Telecommunications and Information Administration**  
**INSTITUTE FOR TELECOMMUNICATION SCIENCES**  
325 Broadway  
Boulder, Colorado 80303-3328

Reply to the attention of:

May 14, 1991

ITS.S4

**USDA Forest Service**  
Atten: Mr. Larry Dunham  
#15 12th Street  
Petersburg AK 99833

Dear Larry:

The models that are used to produce the CSPM plots were developed from measurements and electromagnetic theory by the Central Radio Propagation Laboratory, a research group that was formed within the National Bureau of Standards after WWII. That research resulted in the classic report NBS Tech Note 101, "Transmission Loss Predictions for Tropospheric Communication Circuits", in 1967. A computer algorithm was produced to automate Tech Note 101 in 1968 and its title is "Prediction of Tropospheric Radio Transmission Loss over Irregular Terrain ---A Computer Method 1968". This method is commonly called by its authors names, the Longley-Rice Method. The most current algorithm is called the ITS ITM which is short for the Institute for Telecommunication Sciences Irregular Terrain Model.

CSPM is an applications program that uses the ITM as its propagation model, uses a terrain data base that for Alaska is on a 3-sec by 3-sec grid basis, and uses contouring and plotting algorithms that are particular to this site.

We have had some 250 clients who have used CSPM to analyze their telecommunications problems for ground wave in the 20 MHz to 20 GHz portion of the spectrum. These users include Federal and State Government radio system designers but the majority of the users are FM and TV broadcasters, cellular phone operators, and communications consultants. Some of the system designers who have used CSPM for analyses include Motorola, Ericsson GE Mobile, PacTel, USWest, McCaw, Bell Atlantic, NYNEX, CUE Paging, ConTel and others. They make use of prediction programs such as CSPM because of the long history of the model's development and because field measurements are costly, require well-calibrated equipment, need well-designed experimental measurement methods, and finally require knowledgeable field personnel to conduct the measurements properly.

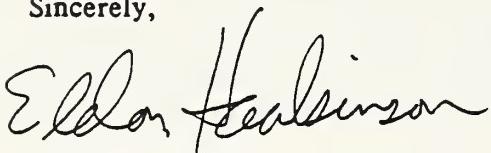
On the other hand, if a system designer wanted to conduct field measurements it would be prudent for that designer to use the services of a company that routinely conducts these types of

measurements. One such company is SAFECO in Chicago (312-631-6216, contact Mr. Buddy Meek). They use GPS receivers to track their vehicles location, make many measurements at each measurement point in order to extract the measurement median value, and provide enough measurement points to make a statistically significant measurement survey. As an example they would conduct a survey of a 40 base station cellular system, making measurements in 3 sectors for each cell at a cost of approximately \$25,000 for a continental US location. They estimated the cost of a one frequency, one city measurement and analysis in Alaska would be a minimum of \$10,000.

Signal measurements should be made under all weather conditions, all seasons of the year, and in the area of interest including industrial, urban, residential, and rural locations if all exist in the area. At each measurement point the measurement antenna must be moved through roughly 40 wavelengths with the median of the 40 wavelengths used as the measurement point value. This step removes the multipath effect on the measurements.

As you can see, the need for good reliable radio propagation prediction tools such as CSPM are in great demand because the alternative is expensive and time consuming. If you have any questions, you may call me at (303) 497-5304.

Sincerely,



Eldon Haakinson

Electrical Engineer, Project Leader

Radio Research and System Applications Group

# **Appendix E**

## **Bibliography**



# APPENDIX E

## BIBLIOGRAPHY

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- Kruse, J., and R. Frazier. 1988. *Tongass Resource Use Cooperative Study*. Vol. II, p. 25.
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